

AGENDA

MEETING, MARCH 4, 2016

A meeting of the South Coast Air Quality Management District Board will be held at 9:00 a.m., in the Auditorium at SCAQMD Headquarters, 21865 Copley Drive, Diamond Bar, California.

Questions About an Agenda Item	• The name and telephone number of the appropriate staff person to call for additional information or to resolve concerns is listed for each agenda item.
	• In preparation for the meeting, you are encouraged to obtain whatever clarifying information may be needed to allow the Board to move expeditiously in its deliberations.
Meeting Procedure	• The public meeting of the SCAQMD Governing Board begins at 9:00a.m. The Governing Board generally will consider items in the order listed on the agenda. However, <u>any item</u> may be considered in <u>any order</u> .
	• After taking action on any agenda item not requiring a public hearing, the Board may reconsider or amend the item at any time during the meeting.
Questions About Progress of the Meeting	• During the meeting, the public may call the Clerk of the Board's Office at (909) 396-2500 for the number of the agenda item the Board is currently discussing.

The agenda and documents in the agenda packet will be made available upon request in appropriate alternative formats to assist persons with a disability. Disability-related accommodations will also be made available to allow participation in the Board meeting. Any accommodations must be requested as soon as practicable. Requests will be accommodated to the extent feasible. Please telephone the Clerk of the Boards Office at (909) 396-2500 from 7:00 a.m. to 5:30p.m. Tuesday through Friday.

All documents (i) constituting non-exempt public records, (ii) relating to an item on the agenda, and (iii) having been distributed to at least a majority of the Governing Board after the agenda is posted, are available prior to the meeting for public review at the South Coast Air Quality Management District Clerk of the Board's Office, 21865 Copley Drive, Diamond Bar, CA 91765.

The Agenda is subject to revisions. For the latest version of agenda items herein or missing agenda items, check the District's web page (www.aqmd.gov) or contact the Clerk of the Board, (909) 396-2500. Copies of revised agendas will also be available at the Board meeting.

Cleaning the air that we breathe...

CALL TO ORDER

- Pledge of Allegiance
- Opening Comments: William A. Burke, Ed.D., Chair Other Board Members Barry R. Wallerstein, D. Env., Executive Officer
- Swearing In of Reappointed Board Member Michael Cacciotti
 Burke

Staff/Phone (909) 396-

CONSENT CALENDAR (Items 1 through 27)

Note: Consent Calendar items held for discussion will be moved to Item No. 28

1.Approve Minutes of February 5, 2016 Board MeetingMcDaniel/25002.Set Public Hearing April 1, 2016 to Receive Public Input on
Executive Officer's Draft Goals and Priority Objectives for
FY 2016-17Wallerstein/3131A set of draft goals for the FY 2016-17 Budget has been developed. The
Executive Officer wishes to receive public and Board Member input on these
goals and priority objectives as they serve as the foundation of SCAQMD's Work
Program. (Reviewed: Administrative Committee, February 12, 2016)Wallerstein/3131

Budget/Fiscal Impact

3. Execute Contract to Cost-Share Alternative Fuel Station Miyasato/3249 Expansion

Ontario CNG Station, Inc. (Ontario CNG) is a comprehensive public access fueling facility located at a busy intersection adjacent to the Ontario International Airport and I-10 corridor. It is a conventional, continuously manned fueling station with a car wash and convenience store that provides petroleum- and biobased and CNG fuels and is developing on-site produced hydrogen fuel and electric vehicle charging. The significant CNG fueling demand at this location is currently supplied by a single compressor, placing a burden on its users which include school bus and long-haul goods movement vehicle operators. This action is to execute a contract with Ontario CNG in an amount not to exceed \$200,000 from the Clean Fuels Fund (31) to cost-share the expansion of the CNG station. (Reviewed: Technology Committee, February 19, 2016; Recommended for Approval) 4. Establish Special Revenue Fund, Recognize and Transfer Funds, Miyasato/3249 and Execute Contracts to Develop and Demonstrate Zero Emission Capable Dravage Trucks

SCAQMD received a \$23.658.500 award to develop and demonstrate zero emission drayage trucks under CARB's Low Carbon Transportation Greenhouse Gas Reduction Fund Investments, with a total project cost of \$40,122,470. Based on total match requirements, SCAQMD is providing \$6,001,531, partnering air districts are providing \$4,400,000 in cash and other project partners are providing \$6,062,439 in-kind. This action is to establish the GHG Reduction Projects Special Revenue Fund and recognize revenue upon receipt in the amount of \$28,058,500 into this Special Revenue Fund. This action is to also transfer SCAQMD's cost-share of \$6.001.531 from the Clean Fuels Fund (31) to the GHG Reduction Projects Special Revenue Fund and to execute contracts for the development and demonstration of zero emission (Reviewed: Technology Committee, February 19, 2016; dravage trucks. Recommended for Approval)

Authorize Acquisition of Four Advanced Technology Vehicles for 5. SCAQMD's Alternative Fuel Vehicle Demonstration Program

SCAQMD tests and demonstrates new vehicles with low- and zero-emission technologies as they become available. This action is to purchase three Chevrolet Volts and one Toyota RAV4 EV that are in current use in the SCAQMD fleet and with current carpool lane access stickers, prior to expiration of their leases. The total cost to the SCAQMD for these four vehicles will not exceed \$107,000 from the Clean Fuels Fund (31). (Reviewed: Technology Committee, February 19, 2016; Recommended for Approval)

6. Approve Truck Projects for Proposition 1B-Goods Movement Program

In July 2015, the Board approved issuance of a Program Announcement for heavy-duty truck projects under the Proposition 1B-Goods Movement Program. The Program Announcement closed on November 20, 2015. Due to the impending January 1, 2017 compliance deadline for small fleets subject to CARB's Truck and Bus Regulation, the applications submitted by small fleets were evaluated first. In order to qualify for funding, the small fleet truck projects must be operational by December 31, 2016. To allow sufficient time for delivery of the replacement trucks, staff recommends execution of contracts with eligible small fleets upon verification of a passing compliance check by CARB. This action is to execute contracts for eligible small fleet truck projects contingent upon approval by CARB in an amount not to exceed \$7,255,000 from the Proposition 1B-Goods Movement Program Fund (81). (No Committee Review)

Miyasato/3249

Minassian/2641

7. Adopt Resolution Recognizing Funds and Accepting Terms and Conditions for FY 2015-16 Carl Moyer Program Award, Issue Program Announcements for Carl Moyer Program and SOON Provision, Execute and Amend Contracts, and Amend SOON Provision Implementation Guidelines

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These actions are to adopt a resolution recognizing up to \$26 million in Carl Moyer Program grant awards from CARB under SB 1107 with its terms and conditions for FY 2015-16 and to approve the release of Program Announcements for the FY 2015-16 "Year 18" Carl Moyer Program and SOON Provision to provide incentive funding for low-emitting on- and off-road vehicles and equipment. Additionally, these actions are to execute and amend contracts in the amount of \$570,799, comprised of \$542,300 from the Air Quality Investment Fund, Rule 2202 Program (27), and \$28,499 from the Carl Moyer Program SB 1107 Fund (32). Finally, this action is to approve amendments to the SOON Provision Implementation Guidelines. (Reviewed: Technology Committee, February 19, 2016; Recommended for Approval)

Issue Program Announcements for Electric Lawn Mower Vendors, Licensed Scrappers and Support Service Providers

Staff proposes to extend the Lawn Mower Exchange Program by offering similar incentives in fall 2016 to generate cost-effective emission reductions. This action is to issue Program Announcements to solicit competitive bids from manufacturers of cordless battery-electric lawn mowers in sufficient quantities and at the lowest possible price for the 2016 program as well as from licensed scrappers and support service providers to physically handle mowers at lawn mower exchange events. (Reviewed: Mobile Source Committee, February 19, 2016; Recommended for Approval)

Recognize Revenue and Appropriate Funds to Develop Low-Cost Tisopulos/3123 Sensor Network for Monitoring PM Emissions from Waste Disposal and Recycling Facility

SCAQMD and Rainbow Transfer/Recycling Inc. (Rainbow) have entered into a Stipulated Order for Abatement to resolve their dispute over application of Rule 410 and to achieve compliance with the Rule's enclosure requirement. Pursuant to the agreement set forth in the Stipulated Order for Abatement, Rainbow contributed \$40,000 to SCAQMD's General Fund for an air monitoring study to measure potential fugitive PM emissions from the facility using low-cost sensors. This action is to recognize \$40,000 in revenue into the General Fund and appropriate this amount to the Science & Technology Advancement Budget to support the development and implementation of a PM monitoring sensor network. (Reviewed: Technology Committee, February 19, 2016; Recommended for Approval)

Minassian/2641

10. Approve Implementation of Three Additional Incentive Programs, Fine/2239 Amend Existing Contract, Expand Implementation Areas, and Allocate Funds for Implementation of U.S. EPA's Targeted Air Shed Grant

On March 4, 2011, the Board approved funding allocations from U.S. EPA's Targeted Air Shed Grant Program for \$2,913,123 to implement incentive programs to reduce criteria pollutant emissions in the two Clean Communities Plan pilot areas of Boyle Heights and San Bernardino. This action is to use the approximately \$800,000 remaining to: 1) implement an incentive program for \$236.089 that will allow the Executive Officer to reimburse government and nonprofit organizations that install electric vehicle charging equipment and/or solar panels to support electric vehicle charging equipment; 2) implement an incentive program to replace pre-1987 school buses with CNG buses and associated infrastructure, if requested, at a cost not to exceed \$180,000 per school bus at Los Angeles Unified School District; 3) implement an incentive program for \$40,000 to reimburse government and non-profit organizations that purchase commercial cordless electric yard equipment; 4) modify an existing contract with Mean Green Products, LLC by an amount not to exceed \$150,000 to expand the pilot program to purchase additional commercial electric lawn mowers in Western Riverside County for government agencies; and 5) expand implementation of the above incentive programs to include San Bernardino. Boyle Heights, Western Riverside County, and beyond to other environmental justice communities in Orange County and throughout the Basin if needed. (Reviewed: Mobile Source Committee, February 19, 2016; Recommended for Approval)

11. Transfer and Appropriate Funds and Issue Purchase Order for Field Monitoring Equipment

This action is to transfer and appropriate funding to Engineering & Compliance's FY 2015-16 Budget and to issue a purchase order for purchase of an infrared camera for monitoring and recording of hydrocarbon emissions from various processes, including, but not limited to, refineries, oil and gas field production and storage sites and other petroleum related operations. (Reviewed: Administrative Committee, February 12, 2016; Recommended for Approval)

12. Approve SCAQMD Annual Investment Policy, Delegation of Authority to Appointed Treasurer to Invest SCAQMD Funds

State law requires a local government entity annually to provide a statement of investment policy for consideration at a public meeting and to renew its delegation of authority to its treasurer to invest and reinvest funds of the local agency. (Reviewed: Investment Oversight Committee, February 19, 2016; Recommended for Approval)

Nazemi/2662

O'Kelly/2828

13. Execute Contract for Elevator Service, Repairs and Preventative Maintenance

On October 2, 2015, the Board authorized the release of an RFP for elevator service, repairs and preventative maintenance. This action is to execute a threeyear contract with ThyssenKrupp Elevator Inc. for a total amount not to exceed \$111,276. Sufficient funds are available in the FY 2015-16 Budget and funding will be included in successive budgets for each of the remaining fiscal years. (Reviewed: Administrative Committee, February 12, 2016; Recommended for Approval)

14. Approve Position Reclassification

Article 45 of the Technical & Enforcement and Office, Clerical and Maintenance MOU provides for employee-initiated classification studies. Following receipt of a written request for a classification study from the Teamsters Local 911 representatives, Human Resources staff has evaluated the request and recommends Board approval for the reclassification of a Computer Operator position to an Assistant Telecommunication Technician position in Information Management. This action will result in an annual cost increase of approximately \$3,650. Sufficient funding for this annual cost increase exists in the FY 2015-16 Budget. (Reviewed: Administrative Committee; February 12, 2016; Recommended for Approval)

15. Amend Contract for Document and Case Management System for SCAQMD's Legal Department

On December 6, 2013, the Board approved a contract for \$238,130 with CourtView Justice Solutions, Inc. for implementation of Document and Case Management Software. Legal is currently finalizing implementation of the project. Additional integration for data exchange and production of a specialized report is necessary to fully utilize the capabilities of the software. This action is to amend the contract and appropriate additional funds for the completion of the project. (Reviewed: Administrative Committee, February 12, 2016; Recommended for Approval)

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Johnson/3018

Wiese/3460

Johnson/3018

16. Authorize Staff to Petition U.S. EPA to Adopt Lower On-Road Heavy-Duty Engine Exhaust Emission Standards for NOx

Baird/2302

The largest single category of NOx emission sources in the South Coast Air Basin for 2023 and 2031 is projected to be emissions from heavy-duty trucks and further control of this category is essential to attain the 2023 and 2031 ozone air quality standards. CARB's draft mobile source strategy for the 2016 AQMP includes a proposal for CARB to adopt a lower on-road heavy-duty engine standard for NOx (lowering the standard from 0.2 g/bhp-hr to 0.02 g/bhp-hr) for engines for sale in California, but the majority of the NOx emissions from heavyduty trucks in California come from trucks that are registered out-of-state. U.S. EPA's position is that states cannot assign control measures in the state implementation plan to the federal government under the Clean Air Act. However, under the Administrative Procedure Act, any person may petition a federal agency for a rulemaking. This action is to authorize staff to petition U.S. EPA to adopt a 0.02 g/bhp-hr NOx engine exhaust emissions standard on a nationwide basis. If successful, this action will greatly assist the region in reaching ozone air quality standards, and will help level the playing field between trucks purchased in California and those purchased out of state. (Reviewed: Mobile Source Committee, February 19, 2016; Recommended for Approval)

17. Approve Contract Awards and Modification Approved by MSRC Pettis

As part of their FYs 2014-16 AB 2766 Discretionary Fund Work Program, the MSRC approved two new contracts under the Alternative Fuel Infrastructure Program, as well as a modification to an award under the Transportation Control Measure Partnership Program. At this time the MSRC seeks Board approval of the contract awards and modification. (Reviewed: Mobile Source Air Pollution Reduction Review Committee, February 18, 2016; Recommended for Approval)

Action Items/No Fiscal Impact

Approve SCAQMD Comments on U.S. EPA's Proposed Amendments to Regulation Governing U.S. EPA Procedures for Investigating Title VI Complaints

Baird/2302

U.S. EPA has released for public comment its proposed amendments to its regulation governing U.S. EPA procedures for investigating complaints under Title VI of the Civil Rights Act of 1964, which prohibits discrimination by federally funded agencies on the basis of race, color, or national origin. U.S. EPA proposes to eliminate specific deadlines for individual steps in the complaint investigation process. Comments are due March 12, 2016. This action is to approve SCAQMD comments and the transmittal of those comments to U.S. EPA. (Reviewed: Stationary Source Committee, February 19, 2016; Recommended for Approval)

19. Annual Meeting of Brain & Lung Tumor and Air Pollution Foundation

This item is to conduct the annual meeting of the Brain & Lung Tumor and Air Pollution Foundation. The Foundation staff will present an annual report detailing the research supported by the Foundation over the past year, the Foundation's plans for the future, and a financial report. (No Committee Review)

Items 20 through 27 - Information Only/Receive and File

20. Legislative and Public Affairs Report

This report highlights the January 2016 outreach activities of Legislative and Public Affairs, which include: Environmental Justice Update, Community Events/Public Meetings, Business Assistance, and Outreach to Business and Federal, State, and Local Government. (No Committee Review)

21. Hearing Board Report

This reports the actions taken by the Hearing Board during the period of January 1 through January 31, 2016. (No Committee Review)

22. **Civil Filings and Civil Penalties Report**

This reports the monthly penalties from January 1 through January 31, 2016, and legal actions filed by the General Counsel's Office from January 1 through January 31, 2016. An Index of District Rules is attached with the penalty report. (Reviewed: Stationary Source Committee, February 19, 2016)

Whynot/3104 23. Lead Agency Projects and Environmental Documents Received by SCAQMD

This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between January 1, 2016 and January 31, 2016, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA. (Reviewed: Mobile Source Committee, February 19, 2016)

24. Rule and Control Measure Forecast

This report highlights SCAQMD rulemaking activities and public workshops potentially scheduled for the year 2016. (No Committee Review)

Wiese/3460

Camarena/2500

Smith/3242

Wiese/3460

Fine/2239

At its September 9, 2011 meeting, the SCAQMD Board amended Rule 1147 – NOx Reductions from Miscellaneous Sources. The rule requires staff to conduct a technology assessment and report to the Board on the availability of burner systems and heating units for processes with NOx emissions of one pound per day or less. The draft technology assessment considers potential changes to Rule 1147 for specific categories of equipment based on analysis of technical

Rule 1147 Technology Assessment

review the draft Technology Assessment, report findings to Rule 1147 stakeholders and incorporate the reviewer's comments. This action is to receive and file the draft Rule 1147 Technology Assessment. (Reviewed: Stationary Source Committee, November 20, 2015, January 22 and February 19, 2016)

feasibility and cost effectiveness. Staff has proposed to hire a third party to

26. Status Report on Major Projects for Information Management Marlia/3148 Scheduled to Start During Last Six Months of FY 2015-16

Information Management is responsible for data systems management services in support of all SCAQMD operations. This action is to provide the monthly status report on major automation contracts and projects to be initiated by Information Management during the last six months of FY 2015-16. (No Committee Review)

27. FY 2015-16 Contract Activity

This report lists the number of contracts let during the first six months of FY 2015-16, the respective dollar amounts, award type, and the authorized contract signatory for SCAQMD. (No Committee Review)

28. <u>Items Deferred from Consent Calendar</u>

BOARD CALENDAR

25.

29.	Administrative Committee (Receive & File)	Chair: Burke	Wallerstein/3131
30.	Investment Oversight Committee (Receive & File)	Chair: Antonovich	O'Kelly/2828

31. Legislative Committee Chair: Mitchell Smith/3242 Receive and file; and take the following action as recommended:

O'Kelly/2828

Fine/2239

	Agenda Item	Recommendation
	Aliso Canyon Natural Gas Leak Amendments to the Federal Energy Bill	Support
	SB 886/ SB 380 ^[1] (Pavley) Natural Gas Storage: Moratorium	Support and continue to work with author on details involving air quality and SCAQMD operations
	SB 887 (Pavley) Natural Gas Storage Wells	Support and continue to work with author on details involving air quality and SCAQMD operations
	SB 888 (Allen) Gas Corporations: Emergency Management	Support and continue to work with author on details involving air quality and SCAQMD operations
	State and Federal Legislative Proposals Providing for additional Cost Considerations in SCAQMD's Regulatory Program	Approve for staff to prepare bill language for next meeting
1]	The bill language of SB 886 (Payley) wa	is gutted and amended into SB 380

^[1] The bill language of SB 886 (Pavley) was gutted and amended into SB 380 (Pavley).

32.	Mobile Source Committee (Receive & File)	Chair: Parker	Fine/2239
33.	Stationary Source Committee (Receive & File)	Chair: B. Benoit	Nazemi/2662
34.	Technology Committee (Receive & File)	Chair: J. Benoit	Miyasato/3249
35.	Mobile Source Air Pollution Reduction Review Committee (Receive & File)	Board Liaison: Antonovich	Hogo/3184
36.	California Air Resources Board Monthly Report (Receive & File)	Board Rep: Mitchell	McDaniel/2500

Staff Presentation/Board Discussion

37. SCAQMD Comments on CARB Plans to Mitigate Methane Emissions Resulting from Aliso Canyon Gas Leak

Staff has prepared a comment letter, consistent with the December 2015 Board Resolution, requesting that funds be dedicated to benefit Porter Ranch that includes recommendations to CARB regarding projects to mitigate the methane emissions from the Aliso Canyon Gas Leak. This action is to approve the comment letter and direct staff to send the letter to CARB. (Reviewed: Stationary Source Committee, February 19, 2016; Recommended for Approval)

PUBLIC HEARINGS

38. Approve Proposed Guidelines for Disbursement and Tracking of Fine/2239 Funds Received Pursuant to Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption (*Continued from the February 5, 2016 Board Meeting*)

Proposed guidelines have been developed for the use of funds received pursuant to Rule 1304.1 – Electrical Generating Facility Fee for use of Offset Exemption, with targets for projects within close proximity of the Electrical Generating Facilities and in Environmental Justice areas that support regional air quality goals. This action is to obtain approval of the proposed guidelines for disbursement and tracking of funds received pursuant to Rule 1304.1. (Reviewed: Stationary Source Committee, January 22 and February 19, 2016)

39. Annual RECLAIM Audit Report for 2014 Compliance Year

The annual report on the NOx and SOx RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, availability of RECLAIM Trading Credits (RTCs) and their average annual prices, job impacts, compliance issues, and other measures of performance for the twenty-first year of this program. In addition, recent trends in trading future year RTCs are analyzed and presented in this report. Further, a list of facilities that did not reconcile their emissions for the 2014 Compliance Year is included in the report. (Reviewed: Stationary Source Committee, February 19, 2016)

Nazemi/2662

Wallerstein/3131

40. Approve and Adopt Technology Advancement Office 2015 Clean Miyasato/3249 Fuels Program Annual Report, 2016 Plan Update, and Resolution - **~**3

Each year by March 31, the Technology Advancement Office must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year. Staff has reviewed the Clean Fuels Program with the Clean Fuels Advisory Group, the Technology Advancement Advisory Group and other technical experts. Additionally, the 2016 Clean Fuels Program Draft Plan Update was presented to the Technology Committee for review and comment at its October 16, 2015 meeting and included as an attachment to the Technology Committee report for the full Board. This action is to approve and adopt the final Technology Advancement Clean Fuels Program Annual Report for 2015 and 2016 Plan Update as well as the resolution finding that proposed projects do not duplicate any past or present programs. (Reviewed: Technology Committee, February 19, 2016; Recommended for Approval)

OTHER BUSINESS

41. Consider Request by State Senate Environmental Quality Committee for Board to Reconsider December 2015 Amendments to NOx RECLAIM Program

Wiese/3460

This item is to consider a request by the State Senate Environmental Quality Committee and other members of the state Senate to reconsider the Board's December 2015 amendments to the NOx RECLAIM program. Possible actions include directing staff to notice additional amendments to the NOx RECLAIM program. (No Committee Review)

PUBLIC COMMENT PERIOD – (Public Comment on Non-Agenda Items, Pursuant to **Government Code Section 54954.3)**

BOARD MEMBER TRAVEL – (No Written Material)

Board member travel reports have been filed with the Clerk of the Boards, and copies are available upon request.

CLOSED SESSION - (No Written Material)

Wiese/3460

CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION

It is necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(a) and 54956.9(d)(1) to confer with its counsel regarding pending litigation which has been initiated formally and to which the SCAQMD is a party. The actions are:

Communities for a Better Environment v. SCAQMD, Los Angeles Superior Court Case No. BS153472 (Phillips 66);

- <u>People of the State of California, ex rel SCAQMD v. Exide Technologies,</u> <u>Inc.</u>, Los Angeles Superior Court Case No. BC533528;
- In the Matter of SCAQMD v. Exide Technologies, Inc., SCAQMD Hearing Board Case No. 3151-29 (Order for Abatement);
- <u>Exide Technologies, Inc.</u>, Petition for Variance, SCAQMD Hearing Board Case No. 3151-31;
- In re: Exide Technologies, Inc., U.S. Bankruptcy Court for the District of Delaware Case No. 13-11482 (KJC) (Bankruptcy case);
- People of the State of California, ex rel SCAQMD v. Southern California Gas <u>Company</u>, Los Angeles Superior Court Case No. BC608322;
- In the Matter of SCAQMD v. Southern California Gas Company, Aliso Canyon Storage Facility, SCAQMD Hearing Board Case No. 137-76 (Order for Abatement);
- <u>Fast Lane Transportation, Inc. et al. v. City of Los Angeles, et al.</u>, Contra Costa County Superior Court Case No. MSN14-0300 (formerly South Coast Air Quality Management District v. City of Los Angeles, et al., Los Angeles Superior Court Case No. BS 143381) (SCIG);
- <u>Friends of the Eel River v. North Coast Railway Authority</u>, California Supreme Court Case No. S222472 (amicus brief);
- <u>Physicians for Social Responsibility, et al. v. U.S. EPA</u>, U.S. Court of Appeals, Ninth Circuit, Case No. 14-73362 (1-Hour ozone);
- <u>SCAQMD v. City of Moreno Valley, et al.</u>, Riverside County Superior Court, Case Nos. RIC 1511213 and RIC 1601988 (World Logistics Center);
- <u>SCAQMD v. U.S. EPA</u>, U.S. Court of Appeals, Ninth Circuit, Case No. 13-73936 (Morongo Redesignation);
- <u>SCAQMD v. U.S. EPA</u>, U.S. Court of Appeals, Ninth Circuit, Case No. 15-71600 (Pechanga Redesignation);
- <u>SCAQMD v. U.S. EPA</u>, D.C. Circuit Court Case No. 15-1115 (RFP for Coachella);
- <u>Sierra Club v. County of Fresno</u>, California Supreme Court Case No. S219783 (amicus brief);
- <u>Sierra Club, et al. v. U.S. EPA</u>, U.S. District Court for Northern District of California Case No. 3:14-CV-04596 (PM2.5 designation to serious); and
- <u>WildEarth Guardians v. U.S. EPA</u>, D.C. Circuit Court Case No. 14-1145 (PM2.5 moderate designation).

CONFERENCE WITH LEGAL COUNSEL – INITIATING LITIGATION

It is also necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(a) and 54956.9(d)(4) to consider initiation of litigation (two cases).

CONFERENCE WITH LEGAL COUNSEL – INITIATING LITIGATION It is also necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(a) and 54956.9(d)(4) to consider initiation of litigation (two cases).

It is also necessary for the Board to recess to closed session pursuant to Government Code §54956.9(d)(2) to confer with legal counsel for:

ANTICIPATED LITIGATION

Facts: Executive Officer Performance Evaluation/Discipline/Dismissal/Release/Resignation

It is also necessary for the Board to recess to closed session pursuant to Government Code §54957 as specified below:

PUBLIC EMPLOYEE PERFORMANCE EVALUATION/DISCIPLINE/DISMISSAL/RELEASE/RESIGNATION

Title: Executive Officer

PUBLIC EMPLOYEE EMPLOYMENT/APPOINTMENT

Title: Acting Executive Officer

OPEN SESSION

42.	Public Employee Compensation/Severance	Burke
	Title: Executive Officer	

43. Public Employee Compensation Burke Title: Acting Executive Officer

ADJOURNMENT

PUBLIC COMMENTS

Members of the public are afforded an opportunity to speak on any listed item before or during consideration of that item. Please notify the Clerk of the Board, (909) 396-2500, if you wish to do so. All agendas are posted at SCAQMD Headquarters, 21865 Copley Drive, Diamond Bar, California, at least 72 hours in advance of the meeting. At the end of the agenda, an opportunity is also provided for the public to speak on any subject within the SCAQMD's authority. Speakers may be limited to three (3) minutes each.

Note that on items listed on the Consent Calendar and the balance of the agenda any motion, including action, can be taken (consideration is not limited to listed recommended actions). Additional matters can be added and action taken by two-thirds vote, or in the case of an emergency, by a majority vote. Matters raised under Public Comments may not be acted upon at that meeting other than as provided above.

Written comments will be accepted by the Board and made part of the record, provided 25 copies are presented to the Clerk of the Board. Electronic submittals to <u>cob@aqmd.gov</u> of 10 pages or less including attachment, in MS WORD, plain or HTML format will also be accepted by the Board and made part of the record if received no later than 5:00 p.m., on the Tuesday prior to the Board meeting.

ACRONYMS

AQIP = Air Quality Investment Program AQMP = Air Quality Management Plan AVR = Average Vehicle Ridership BACT = Best Available Control Technology Cal/EPA = California Environmental Protection Agency CARB = California Air Resources Board CEMS = Continuous Emissions Monitoring Systems CEC = California Energy Commission CEQA = California Environmental Quality Act CE-CERT =College of Engineering-Center for Environmental Research and Technology CNG = Compressed Natural Gas CO = Carbon Monoxide CTG = Control Techniques Guideline DOE = Department of Energy EV = Electric Vehicle FY = Fiscal Year GHG = Greenhouse Gas HRA = Health Risk Assessment LEV = Low Emission Vehicle LNG = Liquefied Natural Gas MATES = Multiple Air Toxics Exposure Study MOU = Memorandum of Understanding MSERCs = Mobile Source Emission Reduction Credits MSRC = Mobile Source (Air Pollution Reduction) Review Committee NATTS =National Air Toxics Trends Station NESHAPS = National Emission Standards for Hazardous Air Pollutants

NGV = Natural Gas Vehicle			
NOx = Oxides of Nitrogen			
NSPS = New Source Performance Standards			
NSR = New Source Review			
OEHHA = Office of Environmental Health Hazard			
Assessment			
PAMS = Photochemical Assessment Monitoring			
Stations			
PAR = Proposed Amended Rule			
PEV = Plug-In Electric Vehicle			
PHEV = Plug-In Hybrid Electric Vehicle			
PM10 = Particulate Matter ≤ 10 microns			
PM2.5 = Particulate Matter < 2.5 microns			
PR = Proposed Rule			
RFP = Request for Proposals			
RFQ = Request for Quotations			
SCAG = Southern California Association of Governments			
SIP = State Implementation Plan			
SOx = Oxides of Sulfur			
SOON = Surplus Off-Road Opt-In for NOx			
SULEV = Super Ultra Low Emission Vehicle			
TCM = Transportation Control Measure			
ULEV = Ultra Low Emission Vehicle			
U.S. EPA = United States Environmental Protection			
Agency			
VOC = Volatile Organic Compound			
VMT = Vehicle Miles Traveled			
ZEV = Zero Emission Vehicle			



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 1

MINUTES: Governing Board Monthly Meeting

SYNOPSIS: Attached are the Minutes of the February 5, 2016 meeting.

RECOMMENDED ACTION: Approve Minutes of the February 5, 2016 Board Meeting.

> Saundra McDaniel, Clerk of the Boards

SM:dg

FRIDAY, FEBRUARY 5, 2016

Notice having been duly given, the regular meeting of the South Coast Air Quality Management District Board was held at District Headquarters, 21865 Copley Drive, Diamond Bar, California. Members present:

William A. Burke, Ed.D., Chairman Speaker of the Assembly Appointee

Council Member Ben Benoit, Vice Chairman Cities of Riverside County

Mayor Michael D. Antonovich County of Los Angeles

Supervisor John J. Benoit County of Riverside

Council Member Joe Buscaino City of Los Angeles

Council Member Michael A. Cacciotti Cities of Los Angeles County – Eastern Region

Dr. Joseph K. Lyou Governor's Appointee

Mayor Larry McCallon Cities of San Bernardino County

Council Member Judith Mitchell (arrived at 9:30 a.m.) Cities of Los Angeles County – Western Region

Supervisor Shawn Nelson County of Orange

Dr. Clark E. Parker, Sr. Senate Rules Committee Appointee

Council Member Dwight Robinson Cities of Orange County

Supervisor Janice Rutherford County of San Bernardino **CALL TO ORDER**: Chairman Burke called the meeting to order at 9:10 a.m.

- Pledge of Allegiance: Led by Council Member Benoit.
- Opening Comments

<u>Chairman Burke</u>. Announced that he attended the Martin Luther King, Jr. Day of Service Forum in Los Angeles on January 16, 2016, where the keynote speaker was former Mayor of San Francisco, Willie L. Brown, Jr.

 Swearing In of Newly Appointed Board Members Larry McCallon and Dwight Robinson

Chairman Burke administered the oath of office to Mayor Larry McCallon, who was appointed by the San Bernardino County City Selection Committee, for a term ending January 15, 2020; and to Council Member Dwight Robinson, who was appointed by the Orange County City Selection Committee, for a term ending January 15, 2020.

• Swearing in of Chair and Vice Chair for Terms January 2016 – January 2018

Supervisor Antonovich administered the oath of office to Chairman Burke, who was re-elected, for a term ending January 14, 2018.

Supervisor Benoit administered the oath of office to Vice Chairman Ben Benoit, who was elected, for a term ending January 14, 2018.

CONSENT CALENDAR

1. Approve Minutes of January 8, 2016 Board Meeting

Budget/Fiscal Impact

- 2. Execute Contract to Evaluate Ozone and Secondary Organic Aerosol Formation from Diesel Fuels
- 3. Execute Contract for Demonstration and Evaluation of Plug-in Electric Vehicle Smart Charging Algorithm at Multiple Electric Grid Scales
- 4. Renew SCAQMD's Membership in CaFCP for Calendar Year 2016, Provide Office Space for CaFCP, and Receive and File California Fuel Cell Partnership Executive Board Agenda and Updates

- 5. Execute Contracts Under Diesel Emissions Reduction Act, Carl Moyer Program, and Rule 2202 Program, and Amend Contract
- 6. Issue Program Announcements for Locomotives, Ships at Berth and Cargo Handling Equipment Projects Under Proposition 1B-Goods Movement Program
- Issue RFP for Technical Assistance for Advanced, Low- and Zero-Emissions Mobile and Stationary Source Technologies and Implementation of Incentive Programs
- 8. Approve Reallocation of Funds Between Existing Programs Previously Approved for Implementation of U.S. EPA's Targeted Air Shed Grant and Modify Contract with Mean Green Products, LLC
- 9. Approve Discontinuation of Parking Cash-Out Program as Required Component Under Rule 2202 – On-Road Motor Vehicle Mitigation Options, Employee Commute Reduction Program
- 10. Issue RFP for Deferred Compensation Plan Consultant Services
- 11. Amend Contracts to Provide Short- and Long-Term Systems Development, Maintenance and Support Services
- 12. Establish List of Prequalified Vendors to Provide Computer, Network, Printer, Hardware and Software
- 13. Approve Charter for SCAQMD's Environmental Justice Community Partnership Advisory Council

Action Item/No Fiscal Impact

14. Special Meeting of Brain & Lung Tumor and Air Pollution Foundation

Items 15 through 20 - Information Only/Receive and File

- 15. Legislative and Public Affairs Report
- 16. Hearing Board Report
- 17. Civil Filings and Civil Penalties Report

- 18. Lead Agency Projects and Environmental Documents Received by SCAQMD
- 19. Rule and Control Measure Forecast
- 20. Status Report on Major Projects for Information Management Scheduled to Start During Last Six Months of FY 2015-16

Dr. Lyou announced his abstention on Item No. 3 because Southern California Edison is a potential source of income to him.

Councilman Robinson announced his abstention on Item No. 1 as he was not present at the January 8, 2016 Board meeting.

Agenda Items 5 and 13 were withheld for discussion.

21. <u>Items Deferred from Consent Calendar</u>

5. Execute Contracts Under Diesel Emissions Reduction Act, Carl Moyer Program, and Rule 2202 Program, and Amend Contract

Councilman Cacciotti questioned what fuel source the dieselpowered marine vessels are being re-powered to.

Fred Minassian, Assistant DEO/Technology Advancement, explained that the vessels are being repowered to utilize the cleanest available diesel technology.

13. Approve Charter for SCAQMD's Environmental Justice Community Partnership Advisory Council

Supervisor Rutherford asked for clarification regarding the difference between the Environmental Justice Advisory Group and the proposed Environmental Justice Community Partnership Advisory Council and what the duties of the newly establish Advisory Council would be.

Lisha Smith, DEO/Legislative and Public Affairs, replied that the newly established Council will be responsible for a specific set of outreach efforts, rather than a broader range of matters that the EJAG addresses.

MOVED BY CACCIOTTI, SECONDED BY J. BENOIT, AGENDA ITEMS 1 THROUGH 20, APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

- AYES: Antonovich, B. Benoit, J. Benoit, Burke, Buscaino, Cacciotti, Lyou (except Item #3), McCallon, Nelson, Parker, Robinson (except Item #1) and Rutherford.
 NOES: None.
- ABSTAIN: Lyou (Item #3 only) and Robinson (Item #1 only).

ABSENT: Mitchell.

BOARD CALENDAR

- 22. Administrative Committee
- 23. Legislative Committee
- 24. Mobile Source Committee
- 25. Stationary Source Committee
- 26. Special Stationary Source Committee
- 27. Technology Committee
- 28. California Air Resources Board Monthly Report
- 29. Status Report on Regulation XIII New Source Review

MOVED BY LYOU, SECONDED BY B. BENOIT, AGENDA ITEMS 22 THROUGH 29, APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

- AYES: Antonovich, B. Benoit, J. Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Nelson, Parker, Robinson and Rutherford.
- NOES: None.
- ABSENT: Mitchell.

(Council Member Mitchell arrived at 9:30 a.m.)

PUBLIC HEARING

30. Amend Rule 1113 – Architectural Coatings (Continued from January 8, 2016 meeting)

Dr. Philip Fine, DEO/Planning and Rules, gave the staff presentation, and noted an errata sheet containing an addition to the resolution language had been distributed to Board Members and made available to the public.

In response to Dr. Parker's inquiry regarding the applicability of the rule, Dr. Fine explained that the rule pertains to products sold and applied within the Basin.

Supervisor Nelson questioned why the implementation date for the phase out for the small container exemption is a concern when the region is already exceeding VOC emission goals that were previously set. He also asked why the District has not performed independent testing on the rust preventative products as the industry is providing differing evidence on which test method is most reliable.

Dr. Wallerstein commented that while the record provides some latitude in the selection of a compliance date, it is prudent in this case to adopt the earliest possible date in order to meet other state and federal standards. He added that the staff proposal attempts to balance concerns from the industry that they need more time to develop effective waterborne coatings, and comments from the Board that those businesses who innovate to meet or exceed standards ahead of schedule should be rewarded.

Dr. Lyou confirmed the importance of performing independent testing; asked why reduction goals used in the AQMP and SIP are conservative compared to those used in the rules themselves; and questioned the reason for including multiple potential test methods in the rule, while requiring industry to meet certain measurements to demonstrate compliance.

Dr. Wallerstein replied that the numbers used in the AQMP are estimates based on information available at the time and that as more detailed analysis is performed during rule developments those values may change.

Dr. Fine commented regarding the test methods that the ASTM Method and Method 313 both have a high degree of certainty and provide similar results, so the rule proves flexibility in that regard.

Supervisor Benoit noted that it seems reasonable to provide manufacturers with additional time for the research and development of the best possible water-based products. Councilwoman Mitchell questioned why additional time is needed when some manufacturers have already successfully developed water-based coatings.

The public hearing was opened and the following individuals addressed the Board on Agenda Item 30.

MEGAN GAUGHAN, Rust-Oleum

Urged the Board to approve an amendment that provides an additional two years prior to the elimination of the small container exemption for rust preventative coatings, noting that the additional time would be used to develop water-based coatings that would match the performance of current coatings.

ROBERT WENDOLL, Dunn Edwards Corporation

Stated that Dunn Edwards would be adversely affected as a result of the proposed amendments and would have to shut down its Los Angeles facility.

DOUG RAYMOND, Raymond Regulatory Resources

Expressed concern with the language in the rule that prohibits advertisement or display of zinc-rich primers which seems to not have any bearing on the emissions of these products.

CURTIS COLEMAN, Lyondell Chemical Company

CHELSEA RITCHIE, Roof Coating Manufacturers Association (RCMA)

Expressed support for staff's recommendation that the exemption for tertiary butyl acetate (tBAc) remain in the rule until a final determination is made by OEHHA regarding whether or not tBAc is a human carcinogen; and RCMA expressed support for developing and implementing test Method 313.

DR. JIM STEWART, Sierra Club

Urged the Board to protect public health without delay by amending the rule as proposed.

JOHN LONG, Vista Paint

Explained that Vista has utilized a water-based rust preventative for over five years; and urged the Board to consider an immediate elimination of oil-based rust preventatives with a two year sell-through of current inventory.

KATY WOLF, Institute for Research and Technical Assistance (IRTA)

Expressed concern that OEHHA has recently re-evaluated the toxicity of tBAc and asked the Board to remove the exemption from the rule immediately.

DAVID DARLING, American Coating Association (ACA)

Noted support for the tBAc exemption to remain in the rule until OEHHA's determination is made; explained that in his written comments and previous comments made during Stationary Source Committee meetings, he raised of concern with how the elimination of the small container exemption will greatly impact small subsets of coating applications including historical preservation, tub and tile refinishing, and door trim and cabinet coatings. He added his support for

Doug Raymond's comments regarding zinc-rich primers and agreed with Dr. Lyou on the test method issues and enforcement. (Submitted Written Comments)

<u>Written Comments Submitted by</u>: Howard Berman, E4 Strategic Solutions

There being no further public testimony on this item, the public hearing was closed.

Councilman Robinson questioned why there appears to be an increased cost associated with water-based products compared to oil-based products; and asked what competitive advantage or disadvantage is present for the company that already produces water-based products.

Naveen Berry, Planning and Rules Manager, explained that water-based formulations are more expensive as they involve newer technology that requires extensive research and development. He added that companies that already sell water-based products have spent money on reformulation and could be at a competitive disadvantage to those companies that are still profiting from oilbased products. He explained some details in the technology assessment that was completed in the past for rust preventative products.

> SUPERVISOR BENOIT MOVED APPROVAL OF THE STAFF PROPOSAL WITH AN AMENDED COMPLIANCE DEADLINE OF JANUARY 2021. THE MOTION WAS SECONDED BY SUPERVISOR NELSON.

Dr. Lyou expressed concern with adopting rule language that will become troublesome once OEHHA makes a determination about the risk of tBAc. He asked that the issue of multiple test methods be brought to the Stationary Source Committee to determine if compliance through these test methods is unnecessarily burdensome on industry.

Councilman Benoit requested elaboration on the other categories of coatings mentioned by industry.

Dr. Fine explained products exist in the other categories that meet the limits and the small container exemption is not necessary. If products do not exist, categories are carved out to meet those needs. Some subcategories cannot be easily carved out because of enforcement issues regarding intended purpose of the product. He further explained that the U.S. EPA will not give credits for going beyond emissions targets if they are not enforceable.

Councilwoman Mitchell raised a concern with the fairness of providing those manufacturers that have not moved more aggressively to find a solution to water-based rust preventative products additional time, when other companies have worked towards compliance with the rule.

COUNCILWOMAN MITCHELL MADE Α SUBSTITUTE MOTION TO APPROVE THE RECOMMENDATION WITH STAFF AN AMENDED COMPLIANCE DEADLINE OF JANUARY 2020. THE MOTION WAS SECONDED BY COUNCILMAN CACCIOTTI.

Councilman Robinson stated that it appears that additional time is necessary to develop the best water-based products possible to be put into the market.

Dr. Parker asked about the timeframes on receiving credits for emissions.

Dr. Fine explained that the AQMP includes commitments for emissions reductions and a timeline to achieve them. Staff is recommending some amendments that prevent emissions from increasing in an enforceable manner.

Councilman Cacciotti suggested an amendment to Councilwoman Mitchell's motion directing staff to provide a report to the Board in January 2019 regarding industry's efforts to reformulate to water-based coatings.

Councilwoman Mitchell agreed to the amendment and the Board took the following action:

MOVED BY MITCHELL, SECONDED BY CACCIOTTI. AGENDA ITEM NO. 30 APPROVED AS RECOMMENDED BY STAFF, ADOPTING RESOLUTION NO. 16-2 CERTIFYING THE FINAL ENVIRONMENTAL ASSESSMENT FOR PROPOSED AMENDED RULE 1113, AND AMENDING RULE 1113, WITH THE FOLLOWING MODIFICATIONS: THE FINAL COMPLIANCE DATE SHALL BE JANUARY 1, 2020, STAFF IS DIRECTED TO PROVIDE A REPORT TO THE BOARD IN JANUARY 2019 ON THE STATUS OF THE DEVELOPMENT OF WATER-BASED THE COATINGS. AND RESOLUTION LANGUAGE BE AMENDED AS NOTED ON THE ERRATA SHEET, BY THE FOLLOWING VOTE:

AYES:	B. Benoit, J. Benoit, Buscaino, Cacciotti, Lyou, Mitchell and Parker,
NOES:	Antonovich, Burke, McCallon, Nelson, Robinson and Rutherford.

ABSENT: None.

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Supervisor Antonovich spoke about the impacts of a natural gas leak at the Aliso Canyon natural gas storage facility; commented on the complicated nature of the various impacts of said leak; and requested that the Board be kept up-to-date on the status of the leak and its resulting effects.

Dr. Wallerstein noted that since the matter has progressed to litigation it is now included in the Board's closed session agenda. He added that the matter has been handled by staff pursuant to past practice with enforcement matters; and explained that staff has been in constant communication with other agencies regarding the matter.

Chairman Burke commented on the unparalleled nature of this matter and the need to keep the Board informed of the status.

Supervisor Benoit suggested the addition of a status update on each month's meeting agenda until this issue is completely resolved.

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31. Affirm Amendment to Regulation XX to Allow Use of Certified Emission Levels for Certain Rule 219 Exempt Equipment and Amend Definition of "Standard Gas Conditions" to Conform to Existing Practice

Jill Whynot, Assistant DEO/Planning and Rules, gave the staff presentation, and noted a sheet that was provided to the Board and the public containing the resolution language.

The public hearing was opened and the following individuals addressed the Board on Agenda Item 31.

HARVEY EDER, Public Solar Power Coalition

Noted that solar technologies have been shown to be cost-effective and a proven technology in regards to RECLAIM facilities.

DR. JIM STEWART, Sierra Club

Commented on a letter from CARB which admonished the amendments passed by the Board in December; and urged the Board to uphold regulations that protect public health and not industry interests.

There being no further public testimony on this item, the public hearing was closed.

MOVED BY CACCIOTTI, SECONDED BY Β. BENOIT, AGENDA ITEM NO. 31 APPROVED AS RECOMMENDED BY STAFF. RESOLUTION ADOPTING NO. 16-3AFFIRMING AND AMENDING PROVISIONS OF REGULATION XX AND FINDING THAT THOSE ARE EXEMPT FROM CEQA, BY THE FOLLOWING VOTE:

AYES: Antonovich, B. Benoit, J. Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Mitchell, Nelson, Parker, Robinson and Rutherford.

NOES: None.

ABSENT: None.

32. Approve Proposed Guidelines for Disbursement and Tracking of Funds Received Pursuant to Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption

Dr. Wallerstein requested that the Board continue the public hearing on this item to the March 4, 2016 Board meeting.

MOVED BY CACCIOTTI, SECONDED BY J. BENOIT, AND UNANIMOUSLY CARRIED THE PUBLIC HEARING TO APPROVE PROPOSED GUIDELINES FOR TRACKING OF DISBURSEMENT AND **FUNDS** RECEIVED PURSUANT TO RULE 1304.1 WAS CONTINUED TO THE MARCH 4, 2016 BOARD MEETING.

OTHER BUSINESS

33. Approve Amendments to Labor Contracts with Teamsters Local 911 and South Coast Professional Employees Association and Approve Same Amendment for Non-Represented Employees

Bill Johnson, Assistant DEO/Administrative and Human Resources, gave a brief overview of the background for Item 33.

MOVED BY CACCIOTTI, SECONDED BY B. BENOIT, AGENDA ITEM 33. APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

- AYES: Antonovich, B. Benoit, J. Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Mitchell, Nelson, Parker, Robinson and Rutherford.
- NOES: None.
- ABSENT: None.

<u>PUBLIC COMMENT PERIOD</u> – (Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3)

Harvey Eder, Public Solar Power Coalition, spoke about the dangers of fossil fuel usage and expressed support for conversion to solar powered technologies.

CLOSED SESSION

The Board recessed to closed session at 11:40 a.m., pursuant to Government Code sections 54956.9(a) and 54956.9(d)(1) to confer with its counsel regarding pending litigation which has been initiated formally and to which the District is a party, as follows:

- <u>People of the State of California, ex rel SCAQMD v. Exide Technologies, Inc.</u>, Los Angeles Superior Court Case No. BC533528;
- <u>In re: Exide Technologies, Inc.</u>, U.S. Bankruptcy Court for the District of Delaware Case No. 13-11482 (KJC) (Bankruptcy case);
- <u>People of the State of California, ex rel SCAQMD v. Southern California Gas</u> <u>Company</u>, Los Angeles Superior Court Case No. BC608322; and
- In the Matter of SCAQMD v. Southern California Gas Company, Aliso Canyon Storage Facility, SCAQMD Hearing Board Case No. 137-76 (Order for Abatement).

Following closed session, General Counsel Kurt Wiese announced that there were no reportable actions taken in closed session.

ADJOURNMENT

There being no further business, the meeting was adjourned by Kurt Wiese at 12:10 p.m.

The foregoing is a true statement of the proceedings held by the South Coast Air Quality Management District Board on February 5, 2016.

Respectfully Submitted,

Denise Garzaro Senior Deputy Clerk

Date Minutes Approved: _____

Dr. William A. Burke, Chairman

ACRONYMS

AQMP = Air Quality Management Plan BARCT= Best Available Retrofit Control Technology CaFCP = California Fuel Cell Partnership CARB = California Air Resources Board CEQA = California Environmental Quality Act EV = Electric Vehicle FY = Fiscal Year GHG = Greenhouse Gas NOx = Oxides of Nitrogen OEHHA = Office of Environmental Health Hazard Assessment RFP = Request for Proposals SIP = State Implementation Plan U.S. EPA = United States Environmental Protection Agency

VOC = Volatile Organic Compound

1 Back to Agenda

BOARD MEETING DATE: March 4, 2016 AGENDA NO. 2

PROPOSAL: Set Public Hearing April 1, 2016 to Receive Public Input on Executive Officer's Draft Goals and Priority Objectives for FY 2016-17

- SYNOPSIS: A set of goals and priority objectives for the FY 2016-17 Budget has been developed. The Executive Officer wishes to receive public and Board Member input on these goals and priority objectives as they serve as the foundation of SCAQMD's Work Program.
- COMMITTEE: Administrative, February 12, 2016; Recommended for Approval

RECOMMENDED ACTION:

Set a Public Hearing on April 1, 2016 to receive public input on the Executive Officer's Goals and Priority Objectives for FY 2016-17.

Barry R. Wallerstein, D.Env. Executive Officer

MBO

Attachment Draft Goals & Priority Objectives for FY 2016-17

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT DRAFT GOALS AND PRIORITY OBJECTIVES FOR FY 2016-2017

MISSION STATEMENT

"All residents have a right to live and work in an environment of clean air and we are committed to undertaking all necessary steps to protect public health from air pollution with sensitivity to the impacts of our actions on the community, public agencies and businesses."

VALUES

- **S** Sound scientific, technical, and legal basis for actions
- **C** Customer service
- A Air that is healthful to breathe
- **Q** Quality programs that are effective and efficient
- **M** Multiple partnerships and collaboration with stakeholders
- **D** Developing solutions for the future

GOALS AND PRIORITY OBJECTIVES

The following Goals and Priority Objectives have been identified as being critical to meeting SCAQMD's Mission in Fiscal Year 2016-17.

<u>GOAL I.</u> Ensure expeditious progress toward meeting clean air standards and protecting public health.

Priority Objective/Project		Outcome
1.	Development of the 2016 AQMP	Finish development of the 2016 AQMP (Plan), bring to the Board for adoption, and submit the Plan into the SIP. Ensure the Plan is a comprehensive attainment strategy to meet the federal 8-hour ozone (75 ppb) and annual PM2.5 (12 ug/m3) air quality standards by the statutory deadlines. Include control measures and modeling to demonstrate attainment of the standards. Early action measures will be identified and implemented, if needed, to further ensure attainment of the federal 24-hour PM2.5 standard. The Plan will also update the 1-hour ozone and the 1997 8-hour ozone SIPs to demonstrate progress toward attainment. Plan, organize and execute basin-wide outreach on the 2016 AQMP that will provide detailed information on the proposed control measures to stakeholders through a series of workshops and public meetings to be held in the counties of Los Angeles, San Bernardino, Riverside, and Orange and the Coachella Valley.
2.	Implementation of OEHHA Revised Health Risk Assessment Guidelines	Implement the OEHHA guidelines and use in SCAQMD programs. Complete analysis related to impacts on spray booths and gas stations and develop recommendations for potential rule changes.

<u>GOAL I.</u> Ensure expeditious progress toward meeting clean air standards and protecting public health. *(Cont.)*

Priority Objective/Project	Outcome
3. Implementation of socioeconomic analysis enhancements	Continue to implement the action plan approved by the Governing Board in 2014 to address recommendations contained in the November 2014 Abt Associates report.
4. Development of the 2016 Air Toxics Control Plan	Complete update to the 2010 Clean Communities Plan and incorporate into the 2016 AQMP. Include identification of toxic emission reduction co-benefits from the AQMP in the control strategy.
5. Cutting-edge of Air Monitoring and Laboratory Capabilities	Continue investing in and deploying state of the art monitoring and analytical tools and technologies in stationary and mobile platforms. Specifically, continue to develop optical remote sensing technologies to provide continuous and enhanced pollutant assessment and visualization capabilities in real and near-real time for criteria pollutants, toxics, metals and GHGs.
 Zero-emission lawn and garden equipment 	Execute agreements with participating public entities and conduct a loaner program for zero-emission lawn and garden equipment to promote their environmental benefits and efficacy. Continue program outreach and inter-organization coordination to ensure smooth implementation of the program.
 Next-generation natural gas engine/hybrid vehicles 	Develop 12 and 6.7 liter natural gas heavy-duty engines that are 90% cleaner than the current emissions standard for NOx, including the option for integration with hybrid systems and alternative fuels that will provide additional NOx reductions.
 Develop and demonstrate zero- emission goods movement technologies 	Continue to work with the DOE, CEC, CARB, the Ports and others to develop and demonstrate zero-emission miles in goods movement technologies. On the federal level, continue to work with the US Congress, the Administration, US DOE, US EPA, US DOT and other federal agencies to secure funding and policy support to facilitate the development, demonstration, deployment, and commercialization of zero and near-zero emission goods movement transportation technologies for on-road and off-road vehicles and marine vessels. Coordinate these actions with national outreach efforts to develop a nationwide supportive stakeholder network comprised of partners from various sectors, including industry, environmental, government, and academia. Continue similar work with the California Legislature, the Governor, and other stakeholders to secure such funding and policy support for zero and near-zero emission goods movement transportation technologies.
 Updating and enhancement of the Carl Moyer Program 	Following the adoption of SB 513 into law, work closely with CARB and CAPCOA to develop the enhanced Carl Moyer Program guidelines allowing expansion of project categories, leveraging of funds, increasing cost-effectiveness limit to fund advanced technologies, and improving implementation efficiency.
10. Proposition 1B-Goods Movement Program	Implement goods movement modernization projects for heavy-duty trucks, locomotives, and cargo handling equipment in accordance with CARB's program guidelines.

Priority Objective/Project	Outcome
11. Incentive Funding Programs	Continue the implementation of the Carl Moyer, Proposition 1B- Goods Movement, Lower-Emission School Bus, Lawnmower Exchange, and other incentive funding programs to achieve early and surplus emissions reductions. Continue outreach for the various incentive programs, connecting with elected officials, businesses, and community members as well as the general public to increase awareness of the programs. Use all available social media and marketing to broaden the outreach; and continue inter-department coordination to successfully implement each program.
12. Ensure compliance through a program that includes using community-based and/or industry-specific deployment of field personnel	Inspect all Major or RECLAIM sources at least annually and inspect all chrome plating facilities quarterly. Conduct a total of 20,000 site visits for compliance evaluations and perform inspections of 3,300 portable equipment and 1,800 Asbestos demolition or renovation activities. Continue targeted evaluation program for select industries, including but not limited to, metal processing, and oil production. Conduct 40 Team Inspections at selected facilities. Continue to further develop inventory, implement rules, and inspect area sources of emissions. On a case by case basis SBA Team will continue support of E&C's compliance efforts by handling referrals seeking help with permit applications forms, recordkeeping, understanding of air quality rules and regulations, etc., to their compliance with air quality rules and regulations. Also through coordinated efforts with SCAQMD's EJ Coordinator, develop new and build upon existing relationships with communities and businesses to increase rule compliance.
13. Ensure compliance through a program that includes timely processing of permit applications for stationary sources	Process a total of 7,000 applications, including 1,800 Permits to Construct (new construction, modification or relocations). Process all Title V Permit Renewals in timely manner and meet all statutory requirements. Through SCAQMD's Small Business Assistance program help more local businesses understand the permit process, prepare and submit permit applications, and expand efforts to educate small business owners about the agency and compliance. Continue the program's expanded outreach to help ensure continued compliance through efforts to more widely distribute the Air Quality Permit Checklist and through the ongoing Expired Permit Outreach Program. Continue to hold meetings with the permit streamlining working group.
14. Continue to implement SCAQMD's Environmental Justice (EJ) policies and programs, and other initiatives directed at equitable treatment for all communities and sensitive populations	Work with residents and community leaders in disproportionately impacted communities to remedy their air quality concerns. Increase partnerships with health, educational, and other organizations in impacted communities. Better communicate, coordinate and streamline agency response to EJ-related concerns, in part through the execution of SCAQMD's Environmental Justice Community Partnership, SCAQMD's initiative offering workshops and forums to strengthen the agency's partnership with both EJ thought leaders and community stakeholders, while increasing awareness of SCAQMD's targeted efforts to mitigate air pollution specifically in and around adversely impacted EJ communities. To

<u>GOAL I.</u> Ensure expeditious progress toward meeting clean air standards and protecting public health. *(Cont.)*

<u>GOAL I.</u> Ensure expeditious progress toward meeting clean air standards and protecting public health. *(Cont.)*

Priority Objective/Project	Outcome
14. Continue to implement SCAQMD's Environmental Justice (EJ) policies and programs, and other initiatives directed at equitable treatment for all communities and sensitive populations (Cont.)	further these objectives in 2016-17, hold community outreach events, one in each county, to recognize local EJ leaders and host a second Environmental Justice conference to broaden all stakeholders' awareness of SCAQMD EJ-related programs as well as SCAQMD's awareness of local EJ community concerns so we can work together towards resolving air quality related EJ issues in the basin. Prioritize representation of SCAQMD on community task forces and other organizations as appropriate, including business organizations, to help mitigate current and prevent future air quality impacts.
15. Enhance community response program	Assess current SCAQMD community response program and identify measurement techniques and protocols with consideration to recurring types of community concerns, and update the program accordingly to be more informative and responsive to impacted communities in a timelier manner. Develop an enhanced communication plan to inform the community regarding complaints. Continue to maintain, build upon, and update our outreach databases and management systems to communicate more effectively with stakeholders, impacted communities and the public. Incorporate rapid response protocols that can be implemented in the SCAQMD's social media presence, website, communication center, and media department in a coordinated fashion to more effectively communicate to the impacted communities and the general public.
16. Prioritize prosecution of high-impact enforcement cases to maximize deterrence for air pollution violations and protect public health	Enhance prosecution of high-impact enforcement cases, such as prosecutions of major or serial violators, major air toxics releases, significant public nuisance cases, or companies having violations at several locations. Achieve satisfactory resolution of these cases to reduce health impacts and provide for future deterrence.
17. Develop and demonstrate low-emission energy generation technology as well as energy storage options	Continue demonstration projects and continue working with stakeholders to facilitate additional power options.
18. Promote, support and partner with other organizations and groups on strategies and programs to encourage multi-modal forms of transportation.	Promotion of bus, light rail, heavy rail, and bicycle usage through partnerships resulting in reduction of traffic congestion and improved air quality and health.
 19. Update Digital Advisor delivery platform. 20. Ensure compliance through Small Business outreach programs 	Develop a universal interactive Digital Advisor that can be simultaneously delivered across all tablet and PC platforms. Execute the continued expansion of SCAQMD's Small Business Assistance programs to increase small business owners' and operators understanding of the agency and compliance requirements. Programs to include: (1) introduction of revised form and increase effective usage of the Air Quality Permit Checklist (AQPC) that helps to determine businesses' air quality requirements and expedites their receipt of SCAQMD clearance letters; and (2) the ongoing implementation of the Expired Permit Outreach Program (EPOP) that prevents small businesses from incurring costly fees due to failure to properly renew their air quality permit(s).

<u>GOAL II.</u> Enhance public education and ensure equitable treatment for all communities.

Priority Objective/Project		Outcome
	Priority Objective/Project Continue implementation of the Clean Communities Plan Pilot Studies in Boyle Heights and San Bernardino and complete implementation of the U.S. EPA Targeted Air Shed Grant Continue with full-scale implementation of state-of-the-art air monitoring technologies	Outcome Complete the implementation of the Clean Communities Plan Pilot Studies in Boyle Heights and San Bernardino. Seek other opportunities to apply for U.S. EPA Targeted Air Shed Grant funding to support emission reduction projects benefiting impacted communities in the basin. Continue with the comprehensive efforts to test emerging "low- cost sensors" for accuracy and performance through AQ-SPEC. Deploy several pilot sensor networks, especially in EJ communities, to help validate enhanced low-cost continuous air quality monitoring capabilities for the SCAQMD, the regulated community and the public. Also conduct optical remote sensing to quantify emissions and their dispersion over EJ communities near large refineries and other sources. Communicate findings to the public and explore collaborative opportunities with entities interested in utilizing such sensors and technologies for community-based monitoring. Plan specific outreach opportunities to promote AQ-
3.	Employ the latest communication technologies; engage in community based programs and outreach events; and foster relationships with traditional media outlets	SPEC, particularly in Southland disadvantaged communities. Creatively and actively engage the public, through town hall and community meetings, video and PSA messages relayed through local cable and Public, Education and Government channels, specifically themed or targeted outreach events links to public interest and environmental and health concerns. Further improve agency engagement with the public through more effective use of website, video and social and digital media tools (i.e. smartphone app, the digital Advisor, YouTube, Facebook, Twitter, email blasts, etc.), as well as the integration of other possible communication platforms to deliver information and messages in a timely manner. Expand upon the recent launching of SCAQMD's comprehensive social media campaigns. Develop and share short educational videos and special targeted publications that further the public's knowledge about SCAQMD rules, actions, jurisdiction, and programs.
4.	Implementation of the EFMP and EFMP Plus-Up Program	The first year of the Enhanced Fleet Modernization Program (EFMP) and EFMP Plus-Up has been successfully implemented. Staff will be working with CARB to develop a long-term program for sustained funding. Continue program outreach and education, specifically in disadvantaged communities and work with interested legislative members to expand outreach to their constituencies.
5.	Continue timely response to community complaints	Respond to all air quality complaints received by SCAQMD in a timely manner.

<u>GOAL III.</u> Operate efficiently and in a manner sensitive to public agencies, businesses, the public and SCAQMD staff.

	Priority Objective/Project	Outcome
1.	Maintain a knowledgeable,	Provide training and educational opportunities to ensure up-to-
	professional and well-trained staff	date expertise and competency in core agency functions. Develop leadership development programs and opportunities to ensure a
		smooth transition of key leadership positions within the agency.

<u>GOAL III.</u> Operate efficiently and in a manner sensitive to public agencies, businesses, the public and SCAQMD staff. *(Cont.)*

Priority Objective/Project		Outcome
	Continue to overhaul SCAQMD's	Continue the phased replacement of server and desktop hardware
2.	Continue to overhaul SCAQMD's information technology systems, including the use of state-of-the-art software, hardware, and communications systems to improve overall agency effectiveness and efficiency	and software. Expand server virtualization and private cloud capabilities, along with public cloud capabilities. Initiate the upgrade of the agency data network infrastructure. Continue to implement electronic document workflow and storage through implementation of the agency enterprise content management system. Continue work on development and implementation of a web-based portal to provide compliance, financial and permitting information to improve overall agency effectiveness and operational activities. Initiate upgrade of the suite of web-based applications to support the agencies new web page "look and feel" and implement responsive design capabilities for application use across all computing devices including desktops, laptops, tablets and mobile phones. Continue expansion of SCAQMD's e- government/e-commerce capabilities by providing for additional
		permit application filing, plan filing and compliance notification form filing capabilities. Continue upgrade and expansion of the GIS infrastructure to implement core HTML-5 capabilities and provide additional access functionalities across all computing devices including desktops, laptops, tablets and mobile phones.
		Expand agency use of Business Intelligence (extraction of meaningful and useful business analysis information from raw operational data) capabilities by providing systems, tools and user training to any user groups that require them. Implement the PeopleSoft Benefits Administration modules to allow SCAQMD staff self-service enrollment, maintenance, cost and claims information relative to SCAQMD provided benefits. Continue effort to further enhance and improve website's user-friendliness and ease of use based on the website evaluation.
3.	Provide excellent customer service to all stakeholders	Ensure that all stakeholders are treated as partners, and that regulations, requirements and objectives are made clear early in the permitting, rulemaking and planning processes. Work with stakeholders in a cooperative and collaborative manner toward air quality goals and related activities in a timely and cost-effective manner, always seeking to balance priorities of public health protections, business retention, economic growth, and job creation, while meeting Federal and State Clean Air Laws.
4.	Build and maintain partnerships with public agencies, stakeholder groups and the business community	Further enhanced outreach programs to public agencies in areas including, but not limited to, rulemaking and rule implementation and enforcement, regional air quality impacts and attainment strategies, and other issues affecting public agencies, especially local government. Develop partnerships with local jurisdictions and regional agencies, and seek cooperative strategies for achieving air quality goals and objectives while supporting local control and sustainable economic growth, and leveraging local efforts to improve the health and well-being of residents. Develop

<u>GOAL III.</u> Operate efficiently and in a manner sensitive to public agencies, businesses, the public and SCAQMD staff. *(Cont.)*

Pri	ority Objective/Project	Outcome
4.	Build and maintain partnerships with public agencies, stakeholder groups and the business community (Cont.)	new partnerships with the business and regulated communities, as well as environmental justice, environmental, health-based organizations, and community groups – especially environmentally conscientious youth groups – through outreach to, and participation in, various activities, conferences, and other opportunities to cultivate early and continuing cooperative relationships. Build relationships outside of California to broaden support for SCAQMD's federal priorities.
5.	Ensure rulemaking is transparent and inclusive	Continue to work with all stakeholders early and continuing through the rule development process. Include all interested stakeholders, including business, local agencies, environmental justice and environmental groups, and the communities that will be affected, in the rulemaking process, and provide ample opportunity for input and collaboration.

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 3

- PROPOSAL: Execute Contract to Cost-Share Alternative Fuel Station Expansion
- SYNOPSIS: Ontario CNG Station, Inc. (Ontario CNG) is a comprehensive public access fueling facility located at a busy intersection adjacent to the Ontario International Airport and I-10 corridor. It is a conventional, continuously manned fueling station with a car wash and convenience store that provides petroleum- and bio-based and CNG fuels and is developing on-site produced hydrogen fuel and electric vehicle charging. The significant CNG fueling demand at this location is currently supplied by a single compressor, placing a burden on its users which include school bus and long-haul goods movement vehicle operators. This action is to execute a contract with Ontario CNG in an amount not to exceed \$200,000 from the Clean Fuels Fund (31) to cost-share the expansion of the CNG station.
- COMMITTEE: Technology, February 19, 2016; Recommended for Approval

RECOMMENDED ACTION:

Authorize the Chairman to execute a contract with Ontario CNG Station, Inc. to cost-share the expansion of their public access station in an amount not to exceed \$200,000 from the Clean Fuels Fund (31).

Barry R. Wallerstein, D.Env.
Executive Officer

MMM:HH:DKS:DRC:PMB

Background

Ontario CNG Station, Inc. (Ontario CNG) is a public access fueling facility located at a busy intersection adjacent to the Ontario International Airport and the I-10 freeway corridor. The station, a Circle K convenience store, and an express car wash are all situated on 53,000 square feet of property owned by Ontario CNG. The facility provides conventional petroleum fuel, biofuel, bio-diesel and CNG fuel and is currently

designing and planning for the installation of: an on-site electrolysis system to produce and dispense hydrogen, three electric vehicle fast charging ports, and 9,000 square feet of electric photovoltaic solar panels on the two canopies covering the vehicle fueling dispensers. The convenience store is manned 24/7 which provides CNG vehicle operators with an added sense of security which is not typical of retail CNG stations. The large area and multiple fueling island design of the station provides easy access to motorists, particularly long-haul tractor trailer rigs. The station is constructed with four fueling islands, two of which are dedicated CNG. One island is currently in service and employs two CNG dispensers each with two fueling hoses and nozzles rated at 3600 and 3000 psig. The station is currently dispensing 50,000 to 70,000 GGE per month of CNG using a single compressor and 57,000 scf of on-site storage. Ontario CNG was previously awarded \$150,000 in funding from the Mobile Source Air Pollution Reduction Review Committee (MSRC) to expand CNG fueling capacity.

Proposal

This action is to execute a contract with Ontario CNG to cost-share the expansion of CNG fueling capacity and capability at their alternative and conventional fueling station in Ontario, California, in an amount not to exceed \$200,000 from the Clean Fuels Fund (31). The proposed expansion will double the current CNG fueling capacity at this station resulting in faster and more efficient refueling for CNG vehicle operators and is expected to further the deployment of a growing number of natural gas vehicles and fleets, in particular heavy-duty CNG-powered vehicles.

The project will include the purchase and installation of a new compressor, two fast-fill dispensers each with two 3600 psig fuel hoses and nozzles, additional CNG storage, and a new electric transformer. The two new CNG dispensers and nozzles will be located on the second CNG fueling island to specifically accommodate long range tractor trailer heavy-duty vehicles which typically have 150 GGE of on-board storage. Two nozzles, one on each dispenser, will have a larger fuel dispensing diameter to allow faster fueling than conventional nozzles. The expected result of this station design and equipment selection is a faster and more efficient refueling experience for all CNG vehicle operators. On-site fuel storage is expected to increase from 245 to 355 GGE of useable fuel. This project will also require that Ontario CNG secure a minimum of 240,000 GGE of renewable natural gas (RNG) annually for three years and demonstrate a closed loop dispensary and storage technology.

Sole Source Justification

Section VIII.B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. This request for sole source award is made under provision B.2.d.: Other circumstances exist which in the determination of the Executive Officer require such waiver in the best interest of the SCAQMD. Specifically, these circumstances are B.2.d.(1): Project involving cost-

sharing by multiple sponsors. Ontario CNG has secured cost-sharing from MSRC and is contributing its own significant financial and in-kind resources for the expansion of CNG fueling capabilities at this location.

Benefits to SCAQMD

The expanded use of CNG fuel, and particularly RNG, will displace petroleum-based fuels, reduce criteria pollutants and significantly reduce GHG emissions. Further expansion of CNG fueling capabilities at this station will support the expansion of CNG vehicles and improve vehicle refueling efficiencies by reducing vehicle refueling time. CNG-powered vehicles and next generation ultra-low NOx heavy-duty natural gas-powered vehicles are expected to produce significantly lower NOx emissions relative to conventional-fueled vehicles and help meet near-zero transportation emission objectives in this region. CNG-powered vehicles using RNG will displace the use of petroleum-powered vehicles and help displace fossil-based natural gas and the transmission-related impacts from out-of-state produced natural gas and its transportation and pipeline distribution. This proposed project is included in the *Technology Advancement Office Clean Fuels Program 2015 Plan Update* under the category of "Infrastructure and Deployment" as "Demonstrate Natural Gas Manufacturing and Distribution Technologies including Renewables."

Resource Impacts

SCAQMD's total cost-share for the project shall not exceed \$200,000 from the Clean Fuels Fund (31). Project cost shares are as follows:

Funding Sources	Funding Amount	Percent
Ontario CNG Station, Inc.	\$448,535	56%
MSRC	\$150,000	19%
SCAQMD (requested)	\$200,000	25%
Total	\$798,535	100%

Sufficient funds are available from the Clean Fuels Fund, established as a special revenue fund resulting from the state-mandated Cleans Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 4

- PROPOSAL: Establish Special Revenue Fund, Recognize and Transfer Funds, and Execute Contracts to Develop and Demonstrate Zero Emission Capable Drayage Trucks
- SYNOPSIS: SCAQMD received a \$23,658,500 award to develop and demonstrate zero emission drayage trucks under CARB's Low Carbon Transportation Greenhouse Gas Reduction Fund Investments, with a total project cost of \$40,122,470. Based on total match requirements, SCAQMD is providing \$6,001,531, partnering air districts are providing \$4,400,000 in cash and other project partners are providing \$6,062,439 in-kind. This action is to establish the GHG Reduction Projects Special Revenue Fund and recognize revenue upon receipt in the amount of \$28,058,500 into this Special Revenue Fund. This action is to also transfer SCAQMD's cost-share of \$6,001,531 from the Clean Fuels Fund (31) to the GHG Reduction Projects Special Revenue Fund and to execute contracts for the development and demonstration of zero emission drayage trucks.

COMMITTEE: Technology, February 19, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

- 1. Establish the GHG Reduction Projects Special Revenue Fund for the purpose of implementing projects funded by CARB's Low Carbon Transportation Green House Gas Reduction Fund Investments.
- 2. Recognize upon receipt up to \$23,658,500 from CARB into GHG Reduction Projects Special Revenue Fund.
- Recognize upon receipt up to \$4,400,000 from other project partners, comprised of \$3,000,000 from Bay Area Air Quality Management District (BAAQMD), \$1,000,000 from San Joaquin Valley Air Pollution Control District (SJVAPCD), \$200,000 from San Diego Air Pollution Control District (SDAPCD), and \$200,000 from San Diego Gas & Electric Company (SDG&E), into the GHG Reduction Projects Special Revenue Fund.
- 4. Transfer SCAQMD's cost-share of \$6,001,531 from the Clean Fuels Fund (31) into the GHG Reduction Projects Special Revenue Fund.

- 5. If needed, transfer up to \$4,400,000 as a temporary loan from the Clean Fuels Fund (31) to the GHG Reduction Projects Special Revenue Fund.
- 6. Authorize the Chairman to execute contracts with the following entities from the GHG Reduction Projects Special Revenue Fund:
 - a) BYD Motors for the development and demonstration of up to 25 Class 8 battery electric drayage trucks in the amount not to exceed \$7,952,000;
 - b) Kenworth Truck Company for the development and demonstration of four Class 8 CNG hybrid electric drayage trucks in the amount not to exceed \$9,137,739;
 - c) Peterbilt Motors for the development and demonstration of up to 12 Class 8 battery electric drayage trucks in the amount not to exceed \$8,000,000; and
 - d) Volvo Technology of America for the development and demonstration of two Class 8 diesel hybrid electric drayage trucks in the amount not to exceed \$7,998,748.
- 7. Authorize reimbursement to the SCAQMD General Fund of up to \$971,544 from the GHG Reduction Projects Special Revenue Fund for administrative costs necessary to implement the Development and Demonstration of Zero Emission Capable Drayage Trucks Project.

Barry R. Wallerstein, D.Env. Executive Officer

MMM:FM:NB:BC

Background

On September 23, 2015, SCAQMD submitted a proposal in response to CARB's solicitation under the Low Carbon Transportation Greenhouse Gas Reduction Fund (GGRF) Investments. The proposal is to develop a portfolio of most commercially promising zero and near-zero emission drayage truck technologies for statewide demonstrations, across a variety of drayage applications in and around the Ports of Long Beach, Los Angeles, Oakland, Stockton and San Diego, in collaboration with four other air districts: BAAQMD, Sacramento Metropolitan AQMD, SJVAPCD and SDAPCD. Each partnering air district is committing staffing and/or cost-share for this groundbreaking initiative to support rapid commercialization of zero emission cargo transport technologies. SCAQMD has also engaged three major U.S. original equipment manufacturers (OEMs) and an international OEM, with necessary resources and networks to support commercialization efforts, to develop and demonstrate four different types of battery and hybrid electric drayage truck technologies in this project, including: two battery electric trucks (BYD Motors and Peterbilt Motors); one natural gas plug-in hybrid electric truck (Kenworth Truck Company); and one plug-in diesel hybrid electric truck (Volvo Technology of America). Our partnership also includes the Los Angeles County Metropolitan Transportation Authority's (Metro's) participation with Intelligent Transportation System (ITS) efficiency integration, electric utility

participation on infrastructure support, and at least 13 end-user fleets to demonstrate electric drayage trucks throughout California ports. On January 12, 2016, CARB notified SCAQMD that the project proposal to develop and demonstrate zero emission Class 8 drayage trucks had been selected for an award.

Proposal

This action is to establish the GHG Reduction Projects Special Revenue Fund and recognize revenue, transfer funds, and execute contracts for the following projects. The projects described below are based on the applicants' proposals and specifications may change as the designs are finalized.

BYD Motors (BYD)

BYD, a global company with over \$9 billion in revenue and 180,000 employees, including an assembly plant in Lancaster, CA, will develop 25 T9 battery electric drayage trucks for this project. The T9 truck is optimized to serve near-dock and short regional drayage routes with a range of 100 miles, supported by 300 kWh batteries on board. The truck is designed to provide similar operating experience compared to equivalent diesel and CNG trucks with matching or exceeding power and torque. The T9 is a Class 8 truck with 80,000 lbs. Gross Combined Weight Rating, powered by two 180 kW traction motors. BYD will utilize 200 kW AC on-board charger for these trucks.

Kenworth Truck Company (Kenworth)

Kenworth, part of the PACCAR Group, expands its partnership with the BAE Systems to develop four plug-in hybrid electric trucks with natural gas range extender, leveraging the prototype development under the DOE-funded Zero Emission Cargo Transport (ZECT) 2 program. These vehicles will target longer regional drayage routes, which Kenworth believes will include other regional heavy-haul markets. The team will continue refining the well-balanced blend of all electric and CNG-based operation to provide a system that can operate in a zero emissions (all-electric) mode and in a conventional hybrid electric mode using CNG to meet customer range needs and flexibility. The powertrain system includes a 200 kW genset using a pre-certified 8.9L CNG engine and two AC traction motors that produce 320kW (430 hp) continuous, with comparable power output to what is typically found in Class 8 truck engines. The hybrid system will be designed for an operating range of 250 miles with approximately 50 miles of all-electric range to operate in zero emissions mode in sensitive areas and disadvantaged communities.

Peterbilt Motors (Peterbilt)

Peterbilt, also part of the PACCAR Group, has partnered with TransPower to develop 12 battery electric drayage trucks, building on a platform developed under the DOEfunded ZECT project, incorporating lessons learned from ongoing demonstrations to further refine and optimize the electric drive system. Eight trucks will be designed to provide 80 miles in range, powered by 215 kWh battery pack to support near-dock drayage routes, and four extended-range battery electric trucks will incorporate a new battery design allowing for over 120 miles of operation per charge with a 311 kWh battery pack at the same system weight as the 215 kWh battery pack. These extended-range trucks will be well suited for longer drayage routes such as Southern California's Inland Empire and routes from the Port of Oakland into Sacramento and the San Joaquin Valley.

Volvo Technology of America (Volvo)

Volvo will build on the success of a past SCAQMD/DOE-funded project by focusing on efficiency and emission optimization of a commercially attractive, highly-flexible product, while ensuring zero emission miles for operations in the most heavily emissions-impacted communities. Volvo offers a unique approach to system-focused hybrid powertrain improvements, utilizing a suite of innovative technologies such as energy and emission optimized driveline controls; aerodynamics and weight improvements; vehicle energy management and driver coaching systems optimized for port drayage operation; and a complete suite of NOx reduction technologies, including engine and exhaust after-treatment innovations. Furthermore, Volvo, in partnership with Metro, will also integrate ITS connectivity solutions, such as vehicle-to-infrastructure and vehicle-to-vehicle communications targeting dynamic speed harmonization and reduced idling, to reduce fuel use and emissions.

Sole Source Justification

Section VIII.B.2. of the Procurement Policy and Procedure identifies provisions under which a sole source award may be justified. The request for sole source awards for this project is made under the provisions B.2.c.(1): The unique experience and capabilities of the proposed contractor or contractor team; B.2.c.(2): The project involves the use of proprietary technology; and B.2.d.(1): Projects involving cost-sharing by multiple sponsors. The four truck OEMs involved in this project: BYD, Kenworth, Peterbilt and Volvo, each have extensive knowledge and experience in advanced electric and hybrid vehicle technologies that are needed to successfully complete this project. The manufacturers will utilize their proprietary technologies in the development of prototype drayage trucks to improve system reliability, efficiency and costs over previous generations. This demonstration project will be cost-shared by the four truck OEMs and other project partners as discussed in the Resource Impacts section.

Benefits to SCAQMD

Projects to support development and demonstration of various electric container transport technologies are included in the *Technology Advancement Office Clean Fuels Program 2015 Plan Update* under the categories of "Electric/Hybrid Technologies & Infrastructure". This project is to develop and demonstrate zero emission capable drayage truck technologies for goods movement operations. Successful demonstration of such projects will contribute to the attainment of clean air standards in the South

Coast Air Basin by eliminating PM and NO_x emissions from replaced diesel drayage trucks.

Resource Impacts

The estimated total project cost is \$40,122,470, to be funded with \$23,658,500 from CARB, \$6,001,531 from SCAQMD and \$4,400,000 from other project partners as well as \$6,062,439 in OEM in-kind cost-share, as follows:

Project Partner	Funding Amount	Percent
CARB	\$23,658,500	59%
OEMs	\$6,062,439	15%
SCAQMD (requested)	\$6,001,531	15%
BAAQMD	\$3,000,000	7.5%
SJVAPCD	\$1,000,000	2.5%
SDAPCD	\$200,000	0.5%
SDG&E	\$200,000	0.5%
Total	\$40,122,470	100%

The \$28,058,500 in revenue from CARB and other project partners will be recognized into the GHG Reduction Projects Special Revenue Fund. A transfer of SCAQMD's cost-share of \$6,001,531 will be made from the Clean Fuels Fund (31) into the GHG Reduction Projects Special Revenue Fund. Any unspent funds will be returned to the Clean Fuels Fund (31) upon project completion. If needed, a temporary loan up to \$4,400,000 will be made from the Clean Fuels Fund (31) to the GHG Reduction Projects Special Revenue Fund to provide cashflow due to the cost-reimbursement requirement of the funding agreement with CARB.

The sources of funds and proposed contractors are outlined in the table below.

Funding Source	BYD	Kenworth	Peterbilt	Volvo	Administration
CARB	\$5,657,564	\$5,714,264	\$5,657,564	\$5,657,564	\$971,544
OEM	\$990,400	\$606,000	\$3,006,340	\$1,459,699	\$0
SCAQMD & Partners	\$2,294,436	\$3,423,475	\$2,342,436	\$2,341,184	\$0
Total	\$8,942,400	\$9,743,739	\$11,006,340	\$9,458,447	\$971,544

Contracts with the proposed contractors will be contingent on execution of a funding agreement with CARB.

Sufficient funds are available from the Clean Fuels Fund (31), established as a special revenue fund resulting from the state-mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 5

- PROPOSAL: Authorize Acquisition of Four Advanced Technology Vehicles for SCAQMD's Alternative Fuel Vehicle Demonstration Program
- SYNOPSIS: SCAQMD tests and demonstrates new vehicles with low- and zeroemission technologies as they become available. This action is to purchase three Chevrolet Volts and one Toyota RAV4 EV that are in current use in the SCAQMD fleet and with current carpool lane access stickers, prior to expiration of their leases. The total cost to SCAQMD for these four vehicles will not exceed \$107,000 from the Clean Fuels Fund (31).

COMMITTEE: Technology, February 19, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

- Authorize the transfer of \$13,689 from the Clean Fuels Fund (31) to the FY 2015-16 Budget of Science & Technology Advancement (Org. 49), Capital Outlays Major Object; and
- 2. Authorize the Procurement Manager to waive publication requirements and competitive bid process to purchase three 2013 Chevrolet Volts and one 2012 Toyota RAV4 EV prior to expiration of current leases for a cost not to exceed \$107,000.

Barry R. Wallerstein, D.Env. Executive Officer

MMM:FM:NB:LHM

Background

The SCAQMD demonstrates a number of advanced technology vehicles to help support the development and deployment of cleaner advanced technology and educate consumers at public outreach events. There are currently a variety of plug-in hybrid electric, electric, and fuel cell vehicles in the SCAQMD Alternative Fuel Vehicle Demonstration Program. In February 2013, the Board approved funding for three Chevrolet Volts and one Toyota RAV4 EV, which were leased for 36 months.

Chevrolet Volt

The 2013 Chevrolet Volt is a full performance four-passenger electric sedan with extended range. It is CARB certified as an enhanced Advanced Technology Partial Zero-Emission Vehicle (ATPZEV). The 2013 Volt is designed to travel about 38 miles (improved from 35 miles for previous model years) at speeds up to 100 mph using the on-board battery pack exclusively, and the gasoline engine serves as a range extender providing several hundred miles of travel. The Volt powertrain includes a 150 hp electric motor which produces 273 lb-ft torque and a 1.4L, 80 hp four-cylinder gasoline engine. Energy is stored on board in a 16-kWh, T-shaped lithium-ion battery, which is currently supplied by Compact Power (LG Chem).

When the Volt is plugged in routinely and used for short trips, the engine may not need to start for extended periods of time. The Volt will fully recharge in 10–15 hours using a standard 120V household outlet and the power cord supplied by GM. Using a dedicated 240V Level 2 charger, the Volt will fully recharge in about 4 hours. The charging can be scheduled for off-peak hours, which can provide additional environmental benefits and lower cost. The Volt uses the SAE J1772 connector, which was adopted as the recommended practice for Level 1 and Level 2 charging for passenger vehicles in the United States in January 2011. CARB-certified enhanced ATPZEVs, including 2012 and newer Volts, qualify for solo-driver carpool lane use with green decals until January 1, 2019.

Additional features include navigation to assist with locating charging stations, front seat heaters for improved overall efficiency, and back-up camera for better visibility and safety. Bluetooth capability plus three years of OnStar service are provided standard on all Volts.

Toyota RAV4 EV

The Toyota RAV4 EV is a full performance five-passenger electric SUV. It has an EPA-rated drive range of 92 miles in normal-charge mode and 113 miles in extended-charge mode. There are two driving modes - normal and sport. In sport mode, top speed is 100 mph, with acceleration of 0–60 mph in 7 seconds. The RAV4 EV has a 40 kWh advanced lithium-ion battery pack provided by Tesla and a 154 hp electric motor.

The RAV4 EV will fully recharge in about 6 hours using a dedicated 240V Level 2 charger. Using a standard 120V household outlet and the power cord supplied by Toyota, full recharge will take about two days. The charging can be scheduled for off-peak hours, which can provide additional environmental benefits and lower cost. The RAV4 EV uses the SAE J1772 connector, which was adopted as the recommended practice for Level 1 and Level 2 charging for passenger vehicles in the United States in

January 2011. CARB-certified ZEVs, including the Toyota RAV4 EV, qualify for solodriver carpool lane use with silver decals until January 1, 2019.

Additional features include navigation with EV applications to assist with locating charging stations, front seat heaters for improved overall efficiency, back-up camera for better visibility and safety, and Bluetooth capability.

Proposal

Based on driver feedback, these vehicles are well-suited to meet SCAQMD's needs, including carpool lane access, zero emission miles and knowledge of vehicle history. Staff recommends the purchase of these vehicles prior to lease expiration in order to maintain these attributes, especially the carpool lane access stickers which are not currently available for new plug-in hybrid vehicles.

This action is to purchase three 2013 Chevrolet Volt California low-emission extendedrange electric vehicles and one 2012 Toyota RAV4 EV, at the end of their current leases, for SCAQMD's Alternative Fuel Vehicle Demonstration Program at a cost not to exceed \$107,000 from the FY 2015-16 Budget of Science & Technology Advancement, Capital Outlays Major Object. Purchase of these vehicles provides continued carpool lane access until January 1, 2019, and will incorporate these advanced technology vehicles for long-term use as our fleet transitions to increase the percentage of ZEV miles.

Benefits to SCAQMD

The proposed project is included in the *Technology Advancement Office Clean Fuels Program 2016 Plan Update* under "Electric/Hybrid Technologies & Technologies." The purpose of including a variety of advanced technology passenger vehicles in SCAQMD's Alternative Fuel Vehicle Demonstration Program is to showcase alternative fuel vehicles and illustrate SCAQMD's own commitment to develop and deploy these advanced technologies. The SCAQMD supports CARB's zero-emission vehicle requirement and strives to educate public and private organizations regarding the benefits and characteristics of zero and near-zero emission vehicles.

Procurement Process

Section VIII B(2) of the Procurement Policy and Procedure identifies six provisions under which detailed specifications or obtaining of bids may be waived by the Executive Officer or his designee. This request is made under provision B.2.c.(2): "The desired services are available from only the sole-source based upon one or more of the following reasons: The project involves the use of proprietary technology;" The request to waive publication requirements in Section VII.A of the Procurement Policy and Procedure is because the vehicles are already in use and will be acquired by paying the residual value plus tax at the end of the leases.

Resource Impacts

The total cost to purchase these four vehicles will not exceed \$107,000 from the FY 2015-16 Budget of Science & Technology Advancement (Org. 49), Capital Outlays Major Object.

Vehicle	Cost	No. of Vehicles	Total*
2013 Chevrolet Volts (with Navigation package, seat heaters, and back-up camera)	\$27,200	3	\$81,600
2012 Toyota RAV4 EV	\$25,400	1	\$25,400
Total			\$107,000

The cost for the vehicles are as follows:

*includes tax and all fees

In addition to the estimated \$93,311 remaining in the FY 2015-16 Budget of Science & Technology Advancement, Capital Outlays Major Object, upon approval, an additional \$13,689 will be transferred from the Clean Fuels Fund (31) to complete the transactions.

Sufficient funds are available in the Clean Fuels Fund, established as a special revenue fund resulting from the state-mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 6

PROPOSAL: Approve Truck Projects for Proposition 1B-Goods Movement Program

SYNOPSIS: In July 2015, the Board approved issuance of a Program Announcement for heavy-duty truck projects under the Proposition 1B-Goods Movement Program. The Program Announcement closed on November 20, 2015. Due to the impending January 1, 2017 compliance deadline for small fleets subject to CARB's Truck and Bus Regulation, the applications submitted by small fleets were evaluated first. In order to qualify for funding, the small fleet truck projects must be operational by December 31, 2016. To allow sufficient time for delivery of the replacement trucks, staff recommends execution of contracts with eligible small fleets upon verification of a passing compliance check by CARB. This action is to execute contracts for eligible small fleet truck projects contingent upon approval by CARB in an amount not to exceed \$7,255,000 from the Proposition 1B-Goods Movement Program Fund (81).

COMMITTEE: No Committee Review

RECOMMENDED ACTION:

Authorize the Executive Officer to execute contracts for heavy-duty truck projects from the list in the attached table, subject to CARB's compliance check approval, in an amount not to exceed \$7,255,000 from the Proposition 1B-Goods Movement Program Fund (81).

Barry R. Wallerstein, D.Env. Executive Officer

MMM:FM:VW

Background

Proposition 1B authorizes \$1 billion to CARB for the Goods Movement Emission Reduction Program (Program). Projects funded by this Program must achieve early or extra emission reductions not otherwise required by rules or regulations. To date, CARB has granted close to \$740 million to local agencies for various goods movement projects. SCAQMD has received about \$400 million of these funds for projects involving heavy-duty diesel trucks, locomotives and ships at berth. The vast majority of these projects are currently operational providing significant emission reduction benefits to the region.

In September 2015, CARB approved new funding awards for the Program including \$137.9 million for the Los Angeles/Inland Empire trade corridor. About \$100.9 million of these funds are set aside for heavy-duty truck projects, zero emission transportation refrigeration units and supporting infrastructure. The remaining \$37 million are allocated for locomotive, ships at berth and cargo handling equipment projects. A Program Announcement (#PA2016-02) for the truck category closed on November 20, 2015. Evaluation of the small fleets of three or fewer trucks for which diesel truck replacements are allowed have been completed. For the large fleets, staff is coordinating the evaluations and timing of the awards with CARB.

Outreach

Relative to the Proposition 1B-Goods Movement Program projects, and in accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the PA and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may have been notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the PA has been emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (http://www.aqmd.gov).

Proposal

Following the close of the Program Announcement on November 20, 2015, staff evaluated the small fleet applications first, due to the impending January 1, 2017 compliance deadline for small fleets subject to CARB's Truck and Bus Regulation. In order to qualify for funding, the truck projects submitted by small fleets must be operational by the end of this year. To allow sufficient time for delivery of the replacement trucks, staff recommends execution of contracts with eligible small fleets upon verification by CARB that the fleet passed the compliance check. This action is to approve small fleet truck projects as listed in the attached table, subject to CARB's approval, in an amount not to exceed \$7,255,000 from the Proposition 1B-Goods Movement Program Fund (81).

Benefits to SCAQMD

The successful implementation of the truck projects will reduce NOx, PM and other pollutant emissions in a cost-effective and expeditious manner which will help achieve the goals of the AQMP. The new equipment/vehicles funded under this program are expected to operate for many years, which will provide long-term emission reduction benefits in the region.

Resource Impacts

Funding for the proposed truck projects shall not exceed \$7,255,000, from the Proposition 1B-Goods Movement Program Fund (81).

Attachment

Heavy-Duty Diesel Truck Projects (Small Fleets)

Project ID#	Applicant Name	Project Type	Maximum Prop1B Award
179-001	Akaal Delivery Service Inc.	Replacement	\$100,000
179-002	Akaal Delivery Service Inc.	Replacement	\$100,000
179-003	Akaal Delivery Service Inc.	Replacement	\$100,000
127-001	Alberto Corpus dba Alberto Corpus Trucking	Replacement	\$60,000
101-001	Alberto Morales Cruz	Replacement	\$60,000
122-001	Aldo Delcid Aguilar	Replacement	\$60,000
49-001	Alejandro Serrano Ochoa dba S.O. Trucking	Replacement	\$60,000
25-001	Alex Manuel Chacon Garcia dba Manuel Chacon Trucking	Replacement	\$60,000
55-001	All Seasons Hay Company	Replacement	\$60,000
3-001	American Nonwovens Inc.	Replacement	\$45,000
3-008	American Nonwovens Inc.	Replacement	\$60,000
248-002	Antelop Logistics, Inc	Replacement	\$60,000
75-005	Antonio Gonzalez dba AJJ Pacific Express	Replacement	\$60,000
232-001	Aquarius Financial Inc./Clovis Gonzales	Replacement	\$60,000
221-001	Aquarius Financial Inc./David Banda	Replacement	\$60,000
226-001	Aquarius Financial Inc./Efrain Lara	Replacement	\$60,000
235-001	Aquarius Financial Inc./Juan J. Munoz dba JJJA Trucking	Replacement	\$60,000
34-001	ARSS Trucking	Replacement	\$60,000
155-001	Behrostaghi Mohammad	Replacement	\$60,000
72-001	Blanca Trucking, Inc.	Replacement	\$60,000
72-002	Blanca Trucking, Inc.	Replacement	\$60,000
252-001	Blue Road Transport, Inc.	Replacement	\$60,000
252-002	Blue Road Transport, Inc.	Replacement	\$60,000
46-001	Brithinee Electric	Replacement	\$25,000
114-001	C J Trucking Lines Inc	Replacement	\$60,000
156-001	Carlos Flores Garcia	Replacement	\$60,000
162-001	Carlos Roberto Gomez dba Mathew G. Trucking	Replacement	\$60,000
238-001	David Young Deuk Chung	Replacement	\$60,000
242-001	Ebow Abanyie	Replacement	\$60,000
33-077	Echo Trucking, Inc.	Replacement	\$60,000
53-001	Edwar Agustin Saravia dba Edar Trucking	Replacement	\$60,000
158-001	Eliezer Trucking	Replacement	\$60,000
54-001	Eliseo D. Hernandez dba E.D.H. Trucking	Replacement	\$60,000
24-001	Eun Yup Kim dba Key Trucking Inc	Replacement	\$60,000
86-FE201	F & E Trucking Corporation	Replacement	\$60,000
225-001	Fernando Rivera Olivares dba Rivera Trucking	Replacement	\$60,000
51-215	FGO Transport	Replacement	\$60,000
151-001	Francisco J. Trujillo	Replacement	\$65,000

Heavy-Duty	Diesel Truck	Projects	(Small	Fleets)
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Project ID#	Applicant Name	Project Type	Maximum Prop1B Award
255-001	Galvan Boyz Trucking	Replacement	\$60,000
255-002	Galvan Boyz Trucking	Replacement	\$60,000
255-003	Galvan Boyz Trucking	Replacement	\$60,000
37-M56	Gerardo Meza dba G. Meza Trucking	Replacement	\$60,000
37-056	Gerardo Meza dba G. Meza Trucking	Replacement	\$45,000
120-001	Gerson E Salazar	Replacement	\$60,000
199-001	GNA Transportation, Inc.	Replacement	\$60,000
115-001	Greg Kuno/Kuno's Grading Inc dba Avery Transport Service	Replacement	\$60,000
52-007	Henry James Chavez dba Chavez Enterprises	Replacement	\$60,000
224-001	Heriberto J. Flores dba HJF Trucking	Replacement	\$60,000
153-001	International Export, Inc.	Replacement	\$60,000
111-001	J & J Drayage Inc.	Replacement	\$60,000
185-001	Jaime Hernandez	Replacement	\$60,000
185-002	Jaime Hernandez	Replacement	\$60,000
59-001	Jimmy D Marshall dba M&M Trucking	Replacement	\$60,000
251-001	Joaquin Moreira	Replacement	\$25,000
241-001	Joe E. Ruiz	Replacement	\$60,000
113-001	Joel Garcia Carbo dba Carbo Transport Inc	Replacement	\$60,000
237-001	Jorge Alberto Hernandez	Replacement	\$60,000
159-001	Jorge B. Quiroa dba JQ Transport	Replacement	\$45,000
227-001	Jose Hector Islas	Replacement	\$60,000
184-001	Jose Luis Hernandez	Replacement	\$60,000
106-001	Juan C Garcia	Replacement	\$60,000
121-001	Juan Carlos Gastelum dba J & A Trucking	Replacement	\$60,000
77-001	Juan Carlos Hernandez dba J & L Trucking	Replacement	\$60,000
231-001	Juan Carlos Martinez dba JC Trucking	Replacement	\$60,000
128-001	Juan M Corpus dba Juan M Corpus Trucking	Replacement	\$60,000
94-001	Laserstar Enterprises, Inc.	Replacement	\$60,000
154-001	Lazo Transport, Inc.	Replacement	\$60,000
73-001	Lejend Corporation	Replacement	\$60,000
73-002	Lejend Corporation	Replacement	\$60,000
99-001	Leonid Derbarmdiker dba Bronze Duke Trucking	Replacement	\$60,000
9-101	Lowe Materials Transport	Replacement	\$60,000
9-102	Lowe Materials Transport	Replacement	\$60,000
230-001	Luis Nunez dba LNG Trucking	Replacement	\$60,000
47-054	Mail Transportation, Inc.	Replacement	\$60,000
47-076	Mail Transportation, Inc.	Replacement	\$60,000
31-828	Mann Logistics Inc.	Replacement	\$60,000
103-001	Manuel Porfirio dba Santa Apolonia Trucking	Replacement	\$45,000

Project ID#	Applicant Name	Project Type	Maximum Prop1B Award
256-001	Marco Gonzalez	Replacement	\$45,000
15-003	Martin Cazares dba Cazares Trucking	Replacement	\$60,000
201-001	Martin's Trucking	Replacement	\$60,000
124-001	Marvin J. Delcid	Replacement	\$60,000
79-001	Maxlink Logistics, Inc.	Replacement	\$60,000
79-002	Maxlink Logistics, Inc.	Replacement	\$60,000
194-001	Misak Saakyan	Replacement	\$60,000
141-001	MM Trans, LLC	Replacement	\$60,000
210-001	Neli Negre dba N&D Transportation	Replacement	\$60,000
210-002	Neli Negre dba N&D Transportation	Replacement	\$60,000
116-001	Nicholas Wood dba Nick Wood Trucking	Replacement	\$60,000
12-001	Nueva Vision Trucking, Inc.	Replacement	\$60,000
12-002	Nueva Vision Trucking, Inc.	Replacement	\$60,000
100-001	Orlando Andrade dba USA Shavings	Replacement	\$60,000
100-003	Orlando Andrade dba USA Shavings	Replacement	\$60,000
43-001	R.A.S. Transport & Services, LLC	Replacement	\$60,000
5-051	Ramon Medina dba Medina Sons Trucking	Replacement	\$60,000
70-001	Raul S. Ravelo dba Ravelo Trucking	Replacement	\$60,000
247-001	Refugio Quiroz dba Quiroz Transport	Replacement	\$60,000
98-001	Ricardo Alcyr Gonzalez Cruz	Replacement	\$60,000
22-001	Robert Saldana	Replacement	\$60,000
18-001	Roberto Salgado dba RSB & Sons Transport	Replacement	\$60,000
218-001	Rodolfo Hernandez Sanchez	Replacement	\$60,000
183-001	Ruben Duenas Garcia	Replacement	\$60,000
132-001	Ruben Loera Jr.	Replacement	\$60,000
6-701	Ruben Rangel	Replacement	\$60,000
211-001	RZ Trucking	Replacement	\$60,000
263-001	Sand Materials & Aggregate Sales, Inc. dba SM Sales	Replacement	\$60,000
263-002	Sand Materials & Aggregate Sales, Inc. dba SM Sales	Replacement	\$60,000
195-001	Sarkis Mandzhikyan	Replacement	\$60,000
160-001	Sequoia Transportation	Replacement	\$45,000
216-001	Southern Cntys Express LLC//Luis Midence	Replacement	\$60,000
217-001	Southern Cntys Express LLC/David Velasco Trucking	Replacement	\$60,000
215-001	Southern Cntys Express LLC/Wilfredo Reyes	Replacement	\$60,000
220-001	Southern Counties Express/Luis Martinez	Replacement	\$60,000
69-001	Southland Growers	Replacement	\$25,000
260-001	Tecle Fessehaye Sebhatu dba Tecle F. Sebhatu Trucking	Replacement	\$60,000
68-001	Thomas W. Bowen dba JTL Trucking	Replacement	\$60,000
142-001	Three Peaks Corp.	Replacement	\$45,000
148-001	Tracey Potter	Replacement	\$60,000

Heavy-Duty Diesel Truck Projects (Small Fleets)

Project ID#	Applicant Name	Project Type	Maximum Prop1B Award
19-001	Trisha Lynn Conner dba T.S. Conner Trucking	Repower	\$20,000
87-6443	Tubular Steel, Inc.	Replacement	\$60,000
87-6442	Tubular Steel, Inc.	Replacement	\$60,000
16-007	Victor Rodriguez dba V & T Trucking	Replacement	\$60,000
192-001	VM Trucking	Replacement	\$60,000
164-001	Wilson Badios	Replacement	\$60,000

Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 7

- PROPOSAL: Adopt Resolution Recognizing Funds and Accepting Terms and Conditions for FY 2015-16 Carl Moyer Program Award, Issue Program Announcements for Carl Moyer Program and SOON Provision, Execute and Amend Contracts, and Amend SOON Provision Implementation Guidelines
- SYNOPSIS: These actions are to adopt a resolution recognizing up to \$26 million in Carl Moyer Program grant awards from CARB under SB 1107 with its terms and conditions for FY 2015-16 and to approve the release of Program Announcements for the FY 2015-16 "Year 18" Carl Moyer Program and SOON Provision to provide incentive funding for low-emitting on- and off-road vehicles and equipment. Additionally, these actions are to execute and amend contracts in the amount of \$570,799, comprised of \$542,300 from the Air Quality Investment Fund, Rule 2202 Program (27), and \$28,499 from the Carl Moyer Program SB 1107 Fund (32). Finally, this action is to approve amendments to the SOON Provision Implementation Guidelines.

COMMITTEE: Technology, February 19, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

- 1. Adopt the attached resolution recognizing upon receipt up to \$26 million from CARB into the Carl Moyer Program SB 1107 Fund (32) and accepting terms and conditions of the FY 2015-16 Carl Moyer grant award.
- 2. Approve issuance of Program Announcement #PA2016-05 to solicit projects for the FY 2015-16 "Year 18" Carl Moyer Memorial Air Quality Standards Attainment Program.
- 3. Approve issuance of Program Announcement #PA2016-06 to solicit projects for the SOON Provision.
- 4. Authorize the Chairman to execute the following contracts in an amount not to exceed \$542,300, from the Air Quality Investment Fund, Rule 2202 Program (27):
 - a. Philip Huynh for the repower of 2 main engines of a marine vessel in an amount not to exceed \$181,900;

- b. James Simmerman for the repower of 2 main engines of a marine vessel in an amount not to exceed \$145,350; and
- c. Khiet Nguyen for the repower of 2 main and 1 auxiliary engines of a marine vessel in an amount not to exceed \$215,050.
- 5. Authorize the Chairman to amend a contract with West Coast Equipment, LLC for the replacement of 7 old for 3 new off-road equipment with lower-emitting CARB-certified Interim Tier 4 engines with an increase in the funding amount by \$28,499 from the Carl Moyer Program SB 1107 Fund (32), for a new total amount of \$132,509.
- 6. Approve amendments to the SOON Provision Implementation Guidelines as provided in Attachment 4.

Barry R. Wallerstein, D.Env. Executive Officer

MMM:FM

Background

The Carl Moyer Memorial Air Quality Standards Attainment Program (CMP) and the Surplus Off-Road Opt-in for NOx (SOON) Provision provide funding on an incentive basis for the incremental cost of purchasing cleaner than required engines and equipment. Both programs are funded with the Carl Moyer Program SB 1107 and AB 923 funds. This is the 18th year of the CMP and the 12th year of the program with funding from SB 1107 and AB 923.

SOON Provision Implementation Guidelines

On July 11, 2014, the Board amended Rule 2449 - Control of Oxides of Nitrogen Emissions from Off-Road Diesel Vehicles, to revise the reference from Section 2449.3 to Section 2449.2 of Title 13 of the California Code of Regulation. On August 14, 2014, the amended Rule 2449 was submitted to CARB for approval. CARB approved Rule 2449 and forwarded it on to U.S. EPA as a revision to the State Implementation Plan. As part of reviewing the approvability of Rule 2449, U.S. EPA indicated that the SOON Implementation Guidelines (Guidelines) should be amended to reference the appropriate section of the State Regulation. In addition, there is a desire to align the funding levels for the SOON Provision to be the same as the funding levels provided in the Carl Moyer Program.

Proposal

Carl Moyer Program

This action is to adopt the attached resolution recognizing upon receipt up to \$26 million from CARB into the Carl Moyer Program SB 1107 Fund (32) for implementation of the FY 2015-16 "Year 18" CMP and accepting the terms and conditions of the FY 2015-16 Carl Moyer Grant award. CARB has tentatively allocated \$25,495,135 to the SCAQMD. Of this amount, \$23,901,689 is designated for projects funding and \$1,593,446 for administrative and outreach efforts. In addition, \$3,824,270 is required from the SCAQMD as the local match, which will be provided from AB 923 funds.

This action is to also approve the issuance of Program Announcements #PA2016-05 and #PA2016-06 for the Carl Moyer Program and the SOON Provision, respectively. The approximate amounts of available funding are \$23 million for the Carl Moyer Program and \$5 million for the SOON Provision. Additional funds may become available by the time of award approval, upon which more projects will be awarded up to the total amount of funds available. A detailed account of available funds from the Carl Moyer Program Fund, including earned interest and the split between the SB 1107 and the AB 923 funds, will be outlined at the time of award recommendations.

The PAs are issued based on the current program guidelines and the revisions approved by CARB on December 18, 2015. The Carl Moyer PA solicits projects for on-road vehicles, off-road vehicles of small and medium size fleets, locomotives, marine and port applications and other vehicles and equipment. The SOON Provision PA solicits projects for off-road vehicles in large fleets. As in previous years, SCAQMD will only fund diesel-to-diesel applications when alternative fuel engines/vehicles are not commercially available or certified by CARB except for emergency vehicles. Approval of emergency vehicle applications will be on a case-by-case basis. Proposals for all categories will be due by 1:00 pm on Wednesday, June 1, 2016. Staff expects to finalize the review and evaluation of the proposals and recommend awards for Board approval at the October 2016 Board meeting. The Carl Moyer Program and the SOON Provision PAs are attached.

Execute and Amend Contracts

Rule 2202 Air Quality Investment Program requires the SCAQMD to achieve emissions reductions credits with funds submitted by employers in lieu of having rideshare programs. To generate the required NOx emissions credits, proposals were evaluated from the latest oversubscribed Carl Moyer Program solicitation that closed on June 3, 2015. This action is to fund the repower of three marine vessel projects operating in disproportionately impacted areas in an amount not to exceed \$542,300, from the Air Quality Investment Fund, Rule 2202 Program (27). Total annual NOx and PM emissions reductions from the recommended projects are 2.8 tons and 0.1 ton, respectively.

Furthermore, this action is to amend a contract with West Coast Equipment, LLC for the replacement of 7 old for 3 new off-road equipment with lower-emitting CARB-certified Interim Tier 4 engines with an increase in the funding amount by \$28,499, and for a new total amount of \$132,509 from the Carl Moyer Program SB 1107 Fund (32).

Amend SOON Provision Implementation Guidelines

Per discussions with the U.S. EPA on the SIP approvability of Rule 2449, staff is proposing amendments to the reference of the appropriate section under state law, Section 2449.2, Title 13 of the California Code of Regulations. In addition, staff is proposing that that the maximum funding amount for eligible replacement projects be the same as the funding level provided in the Carl Moyer Guidelines for off-road equipment replacement projects. The provisions referred to in the proposed amendment are already in effect and represent no change to existing requirements on affected fleets. This action is to approve the amendments provided in Attachment 4.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the PAs and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the PAs will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<u>http://www.aqmd.gov</u> where it can be viewed by making the selection "Grants & Bids."

Amend SOON Provision Implementation Guidelines

No public workshops were held by SCAQMD staff since the proposed amendments are administrative in nature and would only reference the appropriate section in the California Code of Regulation per discussions with the U.S. EPA. This will provide greater funding flexibility to eligible projects consistent with the Carl Moyer Guidelines for off-road equipment replacement projects.

Program Guideline

At its July 8, 2005 meeting, the SCAQMD Board approved a long-term Program Guideline for the implementation of the Carl Moyer Program in the South Coast Air Basin. The proposed funding distribution for different equipment categories is made in this Board letter according to the criteria outlined in that Guideline with emphasis on the following priorities in order to achieve the highest emission reductions:

- Goods Movement (40 percent allocation)
- Environmental Justice (50 percent allocation)

- Cost-Effectiveness
- Low Emission Engine / Vehicle Preference
- Early Commercialization of Advanced Technologies/Fuels
- Fleet Rules
- School Buses

Funding Distribution

The CMP Guideline includes the requirement that at least 50% of the program funds must be spent in disproportionately impacted areas. At least half the funding allocated under SB 1107 and collected under AB 923 will be awarded to projects located in disproportionately impacted areas. It has been the policy of the SCAQMD to allocate at least 50% of all funding available in the CMP and the SOON Provision, including roll-over funding from previous years and turnback funds, to disproportionately impacted areas.

Disproportionately Impacted Areas Point Ranking

The requirements of the CMP and the SOON Provision will be implemented according to the following criteria.

- 1) All projects must qualify by meeting the cost-effectiveness limits established in the Program Announcement.
- 2) All projects will be evaluated according to the following criteria to qualify for funding as a disproportionately impacted area:
 - a) Poverty Level: Detailed socioeconomic information is not included in the 2010 Census. Such data is collected yearly from a small percentage of the population on a rotating basis by the American Community Survey (ACS). All projects in areas where at least 10 percent of the population falls below the federal poverty level based on the 2008-2012 ACS data are eligible to be included in this category, and
 - b) PM2.5 Exposure: All projects in areas with the highest 15 percent of PM2.5 concentration measured within a 2 km grid will be eligible to be ranked in this category. The highest 15 percent of PM2.5 concentration is 11.10 micrograms per cubic meter and above, on an annual average, or
 - c) Air Toxics Exposure: All projects in areas with a cancer risk of 894 in a million and above (based on MATES IV estimates) will be eligible to be ranked in this category.

The maximum score will be comprised of 40 percent for poverty level and 30 percent each for PM and toxic exposures. Special circumstances exist in some areas, such as the Ports of Long Beach and Los Angeles. Since there are no residents within the ports, poverty ranking could not be established. In this case, the poverty ranking from the adjacent on-shore areas was extended to the ports since these populated areas are directly impacted by port activities.

Benefits to SCAQMD

The SCAQMD has supported a number of activities directed to the advancement of new technologies and commercialization of low-emission alternative fuel technologies. The successful implementation of the Carl Moyer Program and the SOON Provision are direct results of these technology advancement activities. The vehicles and equipment funded under these Program Announcements will operate many years, providing long-term emission reductions.

Resource Impacts

CARB has tentatively allocated \$25,495,135 to the SCAQMD under SB 1107 for implementation of the FY 2015-16 "Year 18" CMP. Of this amount, \$23,901,689 is designated for project funding and \$1,593,446 for administrative and outreach efforts. These funds shall be recognized into the Carl Moyer Program SB 1107 Fund (32). In addition, \$3,824,270 is required as the local match from the SCAQMD, which will be provided from AB 923 funds.

The total funding for the new contracts under the Rule 2202 Program shall not exceed \$542,300 from the Air Quality Investment Fund, Rule 2202 Program (27).

The total funding increase for the contract amendment shall not exceed \$28,499 from the Carl Moyer Program SB 1107 Fund (32).

The proposed amendments to the SOON Provision Implementation Guidelines are administrative in nature and have minimal administrative resource impacts. Existing SCAQMD resources are sufficient for continued implementation and enforcement of the rule and the Guidelines.

Attachments

- A Resolution of the South Coast Air Quality Management District Board Recognizing Funds and Accepting the Terms and Conditions of the FY 2015-16 Carl Moyer Grant Award
- 2. Carl Moyer Program Announcement #PA2016-05
- 3. SOON Provision Program Announcement #PA2016-06
- 4. SOON Provision Implementation Guidelines

RESOLUTION NO. 16-

A Resolution of the South Coast Air Quality Management District Board Recognizing Funds and Accepting the Terms and Conditions of the FY 2015-16 Carl Moyer Grant Award

WHEREAS, under Health & Safety Code §40400 <u>et seq</u>., the South Coast Air Quality Management District (SCAQMD) is the local agency with the primary responsibility for the development, implementation, monitoring and enforcement of air pollution control strategies, clean fuels programs and motor vehicle use reduction measures; and

WHEREAS, the SCAQMD is authorized by Health & Safety Code §§40402, 40440, and 40448.5 to implement programs to reduce transportation emissions, including programs to encourage the use of alternative fuels and low-emission vehicles; to develop and implement other strategies and measures to reduce air contaminants and achieve the state and federal air quality standards; and

WHEREAS, the Board has adopted several programs to reduce emissions from on-road and off-road vehicles, as well as emissions from other equipment, including the School Bus Incentive Program and the Carl Moyer Program; and

WHEREAS, the SCAQMD is designated as an extreme non-attainment area for ozone and as such is required to utilize all feasible means to meet national ambient air quality standards.

THEREFORE, BE IT RESOLVED that the Board of the SCAQMD, State of California, in regular session assembled on March 4, 2016, does hereby accept the terms and conditions of the FY 2015-16 (Year 18) Carl Moyer Program grant award and recognizes up to \$26 million in SB 1107 funds.

BE IT FURTHER RESOLVED that the Executive Officer is authorized and directed to take all steps necessary to carry out this Resolution.

Date

Clerk of the Board



2016 CARL MOYER MEMORIAL AIR QUALITY STANDARDS ATTAINMENT PROGRAM PROGRAM ANNOUNCEMENT "Year 18"

SCAQMD PROGRAM ANNOUNCEMENT #PA2016-05

The South Coast Air Quality Management District (SCAQMD) is seeking project applications for the following purpose according to terms and conditions attached. In the preparation of this Program Announcement (PA) the words "Proposer," "Applicant," "Contractor," and "Consultant" are used interchangeably.

SECTION I – OVERVIEW

PURPOSE

The SCAQMD is seeking applications for the 2016 Carl Moyer Memorial Air Quality Standards Attainment Program (CMP), referred to as "Year 18".

Funding for this PA will be approximately \$23 million, from the CMP Fund.

The purpose of the CMP is to achieve near-term emission reductions of Nitrogen Oxides (NOx), Particulate Matter (PM10) and Reactive Organic Gases (ROG) from heavy- and medium-duty vehicles and equipment operating in California as early and as cost-effectively as possible. The CMP provides financial incentives to assist in the purchase of low-emission heavy- and mediumduty engine technologies to achieve emission reductions that are real, surplus and quantifiable.

This Program Announcement (PA) was prepared based on the Approved Revision of the Carl Moyer Program (CMP) Guidelines dated December 18, 2015, which is available online at http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm, as well as CMP mail-out #MSC 15-25, also available online at http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm, as well as CMP mail-out #MSC 15-25, also available online at http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm, as well as CMP mail-out #MSC 15-25, also available online at http://www.arb.ca.gov/msprog/mailouts/msc1525/msc1525.pdf.

All applications will be evaluated based on criteria set forth in this PA, the CMP Guidelines, and all subsequent updates and modifications/advisories; up to date CMP information may be obtained at Carl Moyer Program Web page at <u>http://www.arb.ca.gov/msprog/moyer/moyer.htm</u>.

INTRODUCTION

CMP funding is provided via two legislative bills, SB 1107 and AB 923. SB 1107 provides approximately \$61 million a year in statewide funding, and AB 923 permits air districts in designated non-attainment areas to collect an additional two dollars in vehicle registration fees to expend on programs to reduce emissions from vehicular sources and off-road equipment. A resolution approving such fees was adopted by the SCAQMD Board on December 3, 2004.

FUNDING CATEGORIES

The specific project categories identified for funding under the SCAQMD's 2016 CMP solicitation are:

On-Road Heavy-Duty Vehicles

- On-Road Heavy-Duty Vehicle projects must generate surplus emission reductions. Therefore, all vehicles subject to California Air Resources Board's (CARB's) Fleet Rules, including but not limited to the Statewide Truck & Bus Regulation, Solid Waste Collection Vehicle Rule, Public Agencies & Utilities Fleet Rule and Drayage Truck Regulation, significantly reduce if not eliminate funding opportunities. The remaining funding opportunities apply exclusively to emergency vehicles and to fleets of three (3) or fewer vehicles. Eligible Emergency Vehicle projects are those in which a new or used replacement vehicle with an engine meeting the current model year California emission standard replaces an older, more polluting fire apparatus.
- A larger fleet (four or more vehicles) may be eligible for a small percentage of funding if the fleet is currently in compliance with the applicable CARB Fleet Regulation. The percentage of funding will be determined by the amount of surplus emission reductions that are generated a minimum of one year prior to regulatory requirements.

Off-Road Heavy-Duty Equipment/Engines

- Off-Road Heavy-Duty Equipment/Engines, including but not limited to construction equipment, marine engines, shore power, locomotives, agricultural tractors, zero-emission rubber-tired gantry (RTG) crane and other cargo handling equipment.
- Large fleets subject to CARB's In-Use Off-Road Equipment regulation¹ are not eligible for funding from the SCAQMD.

Refer to CARB's fleet rule websites that provide detailed information on compliance with these regulations. These are listed below in Section VI.

GENERAL PROGRAM INFORMATION

All project awards shall not exceed the project's incremental cost or the maximum costeffectiveness limit of \$18,260 per ton of weighted emissions reduced, unless revised by CARB prior to SCAQMD awards. All projects must meet the criteria stated in this PA, Appendix A and the CMP Guidelines. Cost-effectiveness is based on NOx, ROG and PM reductions. Project costeffectiveness is calculated according to the following formula:

<u>Annualized Cost (\$/year)</u> [NOx reduction + 20(combustion PM10 reduction) + ROG reduction] (Tons/year)

All projects must be operational within eighteen (18) months of contract execution or by May 20, 2018, whichever is earlier. Some projects may have earlier in-service operation date requirements, if they are subject to CARB regulations.

¹ http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm

It is the applicant's responsibility to ensure that the most current information and requirements are reflected in a submitted application. Applicants should check the CARB website for updates and advisories to the guidelines (<u>www.arb.ca.gov/msprog/moyer/moyer.htm</u>).

In cases of conflict between CARB guidelines and SCAQMD criteria, the more stringent criteria will prevail. SCAQMD will post any new information and requirements on its CMP Web page at www.aqmd.gov/Moyer.

Projects subject to CARB regulations must submit a copy of the most recent CARB compliance report(s) or other documentation that provides SCAQMD with clear understanding of the applicant's fleet rule compliance status.

All emission reductions resulting from funded projects will be retired by the SCAQMD. Public financial incentives will be deducted from the total incremental costs that can be funded with Carl Moyer Program funds except for tax credits, tax deductions, public rebates, public loans, or local air district penalty funds. Local air district mitigation fees and other state and local air district incentives must be part of the cost-effectiveness evaluation.

Federal funding for programs to reduce greenhouse gas (GHG) emissions, funding provided by the Alternative and Renewable Fuel and Vehicle Technology Program, Air Quality Improvement Program, or CARB's Low Carbon Transportation Investment funds to reduce GHG emissions are eligible for use provided the grantee pays at least 15 percent of the project cost from non-public sources.

ELIGIBILITY INFORMATION

Emission reductions obtained through Carl Moyer Program projects must not be required by any federal, state or local regulation, memorandum of agreement/understanding, settlement agreement, mitigation requirement or other legal mandate.

Engines operating under a regulatory compliance extension granted by CARB, an air district or the United States Environmental Protection Agency (U.S. EPA) are not eligible for funding.

A grant recipient subject to an in-use regulation may be eligible to receive CMP funding if the applicant has met all compliance requirements of applicable regulations. Documentation of regulatory compliance must be provided by applicants to air districts at the time of application.

Key program requirements for on- and off-road equipment categories are highlighted below; however, applicants are responsible for consulting the CMP guidelines for additional program limitations/requirements.

ON-ROAD VEHICLES

All on-road projects must generate surplus emission reductions. Therefore, all vehicles subject to CARB's Fleet Rules, including but not limited to the Statewide Truck & Bus Regulation, Solid Waste Collection Vehicle Rule, Public Agencies & Utilities Fleet Rule, and Drayage Truck Regulation, significantly reduce if not eliminate CMP funding opportunities. The remaining funding opportunities discussed below apply exclusively to emergency vehicles and fleets of three (3) or fewer heavy-duty trucks.

The proposed engine for each on-road project must be consistent with the "Intended Service Class" per the CARB Executive Order [medium-heavy duty (MHD) Intended Service Class

engines cannot be used for projects which have the heavy-heavy duty (HHD) vehicle classifications]. Executive Orders for on-road vehicles may be downloaded at: <u>http://www.arb.ca.gov/msprog/onroad/cert/cert.php</u>.

Emergency Vehicles

Eligible emergency vehicle projects are those in which a new or used replacement vehicle with an engine meeting the current model year California emission standard replaces an older, more polluting emergency vehicle. The older, replaced vehicle must be destroyed.

A fire truck reuse option is also available on a case-by-case basis. The fire truck reuse option allows fire departments to give away the existing old vehicle and destroy another older vehicle in its place. Additional requirements should be reviewed and understood at http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_ch6_07_11_14.pdf

New Purchase

On-road new purchase project opportunities are currently very limited and include, (1) engines that are at least 30% cleaner than current standards for NOx (0.14 g/bhp-hr or less) or (2) zero-emission technologies. Both opportunities would generate minimal surplus emission reductions, resulting in very nominal funding amounts.

Repowers

A replacement engine for a repower project must be a CARB-certified engine meeting emissions levels of 0.50 g/bhp-hr NOx and 0.01 g/bhp-hr PM or lower. Repowers with replacement family emission limit (FEL) engines that meet these emissions levels must be based on emission factors for model year 2007-2009 engines.

Due to technological constraints presented with the limited feasibility of newer engines with advanced emissions control equipment fitting into an older vehicle chassis, **single vehicle repower projects are not eligible for Moyer funding**. However, the economics of repower projects involving a large quantity of the same chassis and engine combination may allow compliance with the engine manufacturer quality assurance process that is equivalent to an Original Equipment Manufacturer (OEM) package. In these cases, a prototype vehicle is thoroughly reviewed and tested to ensure that the installation meets OEM requirements, and the successful prototype installation is then replicated in other vehicles with the same chassis and engine combination. While the prototype evaluation (with documented OEM approval) is not eligible for CMP funding, projects to replicate the identical chassis and engine combination will be considered on a case-by-case basis.

Retrofit/Replacement

Please refer to the On-Road Voucher Incentive Program (VIP) to explore funding opportunities for replacement and retrofit funding at: <u>www.aqmd.gov/VIP</u>.

OFF-ROAD COMPRESSION-IGNITION EQUIPMENT

Propulsion engines greater than 25 horsepower on mobile off-road equipment are eligible for CMP funding, with limitations. Off-road heavy-duty equipment/engines include, but are not limited to, construction equipment, agricultural tractors, marine engines, shore power and locomotive equipment. Portable equipment is not eligible for CMP funding.

Construction

Fleets must be in compliance with CARB's In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation) in order to be eligible for funding. Large fleets subject to CARB's In-Use Off-Road Equipment regulation² are no longer eligible for funding from the CMP.

Applicants must submit information regarding fleet size and compliance status. **This must include the Diesel Off-Road On-line Reporting System (DOORS) ID of the fleet, the DOORS Compliance Snapshot, the DOORS equipment list, and the DOORS Equipment Identification Number (EIN) of the funded equipment.** All documentation submitted must be signed and dated by the applicant and include language certifying that the fleet list provided is accurate and complete. Off-road projects fall into three distinct categories: 1) repower with an emission-certified engine, 2) retrofit with a verified-diesel emission control strategy (VDECS), and 3) replacement by a vehicle with an engine certified as meeting the current off-road emission standards.

Engine Repower

Engine repowers are commonly diesel-to-diesel repowers and significant NOx and PM benefits are achieved due to the higher emission levels of the engine being replaced. Funding is not available for projects where a spark-ignition engine (i.e., natural gas, gasoline, etc.) is replaced with a diesel engine. Off-road repower projects must install CARB-verified retrofit equipment subject to the "Retrofit Purchase" discussion below.

Retrofit Purchase

Retrofit is the installation of a CARB-verified diesel emission control device on an existing engine. Examples include, but are not limited to, particulate filters and diesel oxidation catalysts. Retrofit projects that control PM must use the highest level, technically feasible technology available for the equipment being retrofitted, which is defined as a device that achieves the highest level of PM reductions (Level 3 - 85 percent) and the highest level of NOx reductions.

Replacement

Fleets may apply for replacement in lieu of repowering their vehicle, where new or used replacement equipment with an engine certified to the current emission standard or Tier is purchased to replace the existing equipment (which will be scrapped).

Cargo Handling Equipment (CHE) Electrification

Cargo handling equipment fleets must be fully compliant with CARB's Regulation for Cargo Handling Equipment at Ports and Intermodal Rail Yards in order to be eligible for CMP funding. Applicants must provide a copy of their most recent CARB Compliance Plan to document compliance with the regulation.

Existing diesel-powered RTG cranes or diesel-powered CHE (i.e., yard trucks, etc.) operating at a seaport or intermodal railyard in a trade corridor are eligible for CMP funding to offset costs to electrify this equipment. Projects utilizing regulatory extensions are not eligible for funding.

CHE Electrification – RTG Cranes

The CMP allows funding to converting existing diesel-powered RTG cranes with a zeroemission power system. Eligible costs may include the purchase of a new crane or installation of a zero-emission engine, necessary parts for an existing RTG crane including directly related

 $^{^{2}\} http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm$

vehicle modifications, and infrastructure to supply electrical power, utility construction, and costs associated with increasing the capacity of electrical power to the crane. Ineligible costs include design, engineering, consulting, environmental review, legal fees, permits, licenses and associated fees, taxes, metered costs, insurance, operation, maintenance and repair. Projects are evaluated on a case-by-case basis.

CHE Electrification - Other

The CMP allows partial funding of up to 50 percent of the eligible cost or \$50,000/unit, whichever is less, to replace an existing CHE with a zero-emission propulsion system. Eligible costs may include the purchase of a zero-emission yard truck. Ineligible costs include license, registration, taxes (other than federal excise and sales tax), insurance, operation, maintenance and repair. Projects are evaluated on a case-by-case basis.

MARINE VESSEL PROJECTS

Marine vessel project types include engine repower and shore power. Each category is summarized below.

Marine Engine Repower

Limited CMP funding opportunities remain for vessel engines subject to the in-use compliance requirements of CARB's Commercial Harbor Craft (CHC) regulation, since the repower must be completed at least three (3) years prior to the vessel's regulatory in-use compliance date. Based on the vessel's operation, the newer engine's emissions must be surplus to the currently required U.S. EPA marine engine emission standard (i.e., Tier 3, Tier 4, etc.). Remanufacture kits, which are comprised of engine component parts that, when installed, reduce the engine's emissions, are subject to the same requirements as engine repower projects.

Shore Power Projects

Shore power projects are eligible only if applicants submit their CARB-approved Initial Terminal Plan with their application to document compliance with CARB's Shore Power regulation and that the proposed project provides emissions reductions that are surplus to regulatory requirements. Projects not subject to the Shore Power regulation are also eligible.

All subsequent project reports to air districts must include any new or updated Terminal Plans in order to evaluate compliance with the project contract.

For shore power projects that demonstrate eligibility, up to 50 percent of the total cost of a shoreside transformer and other equipment between the vessel and shore-side transformer at the port or terminal is eligible for CMP funding. Any costs directly related and necessary to the installation of the eligible equipment may reasonably be included in the total cost, such as labor for installation, and costs of site preparation. Design and engineering costs associated with the transformer and other eligible equipment between the vessel and transformer are considered professional labor costs required to complete the installation and are eligible for funding.

Up to 100 percent of necessary vessel (non-transformer) retrofit costs, specifically required to allow the vessel to plug into shore-side power, are eligible for CMP funding. Up to 50 percent of any necessary transformer costs on board the vessel are eligible for CMP funding.

Ineligible costs include modifications or enhancements made to the shore-side electrical infrastructure needed to bring power to the terminal. Other ineligible shore power costs consist

of barge or other acquisitions and modification for a portable system, design, construction or metered costs, insurance, operation, maintenance and repair.

LOCOMOTIVES

In the SCAQMD, all new locomotives and replacement engines must be certified to Tier 4 standards to be eligible for CMP funding.

Class 1 freight railroads may be eligible for Carl Moyer funding if Proposition 1B Goods Movement Program funding is not available. Such a project is subject to a case-by-case approval by CARB. Class 3 freight railroads and passenger railroads are not subject to any CARB fleet regulations and are therefore eligible for CMP funding. There are five types of locomotive projects that are eligible for Carl Moyer Program funding:

- 1. Alternative technology switcher (or other cleaner-than-required new locomotive)
- 2. Idle limiting device (ILD)
- 3. U.S. EPA-certified engine remanufacture kit or repower/refurbishment
- 4. CARB-verified retrofit
- 5. Head-end power (HEP) unit (apply as an off-road engine project)

Locomotive project activity must be based upon fuel consumption.

All locomotive projects receiving more than \$50,000 per locomotive in Carl Moyer Program funds must include the purchase and installation of an ILD if the locomotive is not already equipped with such a device and installation is technically feasible.

Refer to the CMP guidelines for additional information regarding these project types: <u>http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_ch11_07_11_14.pdf</u>

DEFINITIONS

Alternative Fuel

Alternative fuels include compressed natural gas (CNG), liquefied natural gas (LNG), hydrogen (H2), methanol, ethanol, propane (LPG) and electric technologies. Experimental technologies and fuels will be referred to CARB for evaluation and possible eligibility in the program.

Equipment Replacement

Equipment replacement means the replacement of an older vehicle or piece of equipment that still has remaining useful life with a newer, cleaner vehicle or piece of equipment. For this project type, applicant must have owned and operated the old equipment in California for the previous two years.

<u>Repower</u>

Vehicle repower means the replacement of an in-use engine with another, cleaner engine (more than 15 percent cleaner).

<u>Retrofit</u>

An emission control system employed exclusively with an in-use engine, vehicle or piece of equipment. **CARB guidance requires the applicant to select the highest level technology certified for that engine that provides the most emission reductions.** For many projects, this includes a diesel emission control device that reduces both PM and NOx emissions. In order to

be eligible for CMP funding, the retrofit device must be verified for the specific engine family found on the equipment <u>and</u> achieve the highest level emission reductions when compared to other verified retrofit devices. If a specific device reduces both NOx and PM but the PM reduction from a retrofit is required by a regulation, only the NOx reduction may be eligible for funding.

SCAQMD Jurisdiction

The SCAQMD is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties. This area of 10,743 square miles is home to over 16.8 million people–about half the population of the whole state of California. It is the second most populated urban area in the United States and one of the smoggiest. Visit www.aqmd.gov/home/about/jurisdiction for more information.

IMPORTANT PROGRAM INFORMATION

- Applicants <u>must</u> provide vendor quotes with their application to document the cost of the low-emission vehicle/equipment project. Applicants may be awarded up to the designated percentage of total cost for the specified type of project (new purchase, repower and/or retrofit). Eligible costs include installation labor and sales tax; however, the total award may not exceed the maximum cost-effectiveness for the equipment/vehicle category. All quotes must have been obtained within 90 days prior to the closing date of the Program Announcement.
- A number of the CARB fleet rules and air quality regulations have reduced or eliminated CMP eligibility. Compliance with existing air quality regulations is a pre-requisite for CMP funding. Only emissions reductions in excess of regulatory requirements can be considered for CMP funding. If applicants are applying for CMP funds to reduce emissions before the required compliance date (i.e., early reductions), the equipment must demonstrate sufficient years of operation before the regulatory compliance deadline. Applicants are responsible for ensuring that they are in full compliance with all applicable regulations and that vehicles/equipment requests under the CMP provide surplus emissions reductions. As noted earlier, applicants must provide documentation of their regulatory compliance status.
- Any tax obligation associated with the award is the responsibility of the grantee.
- All projects must be operational within eighteen (18) months of contract execution or May 20, 2018, whichever is earlier, with the exception of large off-road fleet projects, in which case all equipment must be in operation no later than October 31, 2018.
- All project invoices must be submitted for payment no later than May 20, 2018. Projects which have not invoiced by the applicable date may forfeit their funding.
- The highest level verified diesel emissions control system (VDECS) available is required.
- Repower projects must also include a VDECS, if available for the project engine. The cost of the VDECS equipment and installation may be included in the CMP grant request. It is the responsibility of the applicant to determine the applicability of this requirement, and, if required, to include quotes for this equipment in their application. Projects that

require the additional VDECS that do not have cost and system specification information may not be evaluated by SCAQMD staff.

- No third-party contracts will be executed.
- Pre- and post-inspection of all vehicles/engines/equipment approved for funding will be conducted, as required. Applicants must make all equipment available **locally** (i.e. within the SCAQMD boundaries) for inspections unless specified during contract preparation. Documentation of compliance with existing regulatory requirements is required at the time of pre-inspection.
- **Local** destruction of the engine and/or equipment being replaced is required for repower or replacement projects.
- Emissions reduction calculations will be based on annual hours of operation for off-road equipment projects and annual mileage for on-road vehicle projects.
- For projects that involve extended idling, including but not limited to street sweepers and solid waste collection vehicles, annual fuel consumption may be used as the basis for the emissions reduction evaluation. For projects based on fuel consumption, usage must be based on two years of historical fuel consumption documentation submitted with the application and specific to the equipment for which funding is requested. Documentation may include fuel logs, purchase receipts, business logs, ledger entries, etc. Annual fuel consumption may be used for the emissions reduction evaluation if documentation of previous fuel usage and mileage records demonstrates at least 30% better cost-effectiveness³, as compared to using hours (for off-road) or mileage (for on-road).

PROGRAM ADMINISTRATION

The CMP will be administered locally by the SCAQMD through the Science and Technology Advancement office.

Funding category allocations are provided below in Table 1. The SCAQMD reserves the right to reallocate the funds to another category or subcategory. Additionally, the SCAQMD reserves the right to partially fund a project.

All qualified applications submitted for each category/subcategory will be evaluated for disproportional impacts (discussed in Section IV) and ranked by emission reduction cost-effectiveness.

Proposals for fuel and engine technologies not yet certified by CARB, or falling outside the categories specifically discussed in this PA, will be referred to CARB for determination of CMP eligibility. Please discuss these projects with SCAQMD staff prior to application submittal.

³ This requirement does not apply to projects in the Emergency Vehicle category.

Categ	jory	Cost-Effectiveness \$/ton				
ON-R	OAD					
(A)	Vehicles ¹ (including Emergency Vehicles)	18,260				
OFF-	ROAD					
(A)	Marine/Shore Power	18,260				
(B)	Construction ² (small and medium fleets only)	18,260				
(C)	Locomotives	18,260				
(D)	Cargo Handling Equipment (electrification only)	18,260				

Table 1: Proposed Categories and Cost-Effectiveness Limits

¹ On-road new purchase project opportunities are currently very limited and include, (1) engines that are at least 30% cleaner than current standards for NOx (0.14 g/bhp-hr or less) or (2) zero-emission technologies. Both opportunities would generate minimal surplus emission reductions, resulting in very nominal funding amounts.

² Large fleets subject to CARB's In-Use Off-Road Equipment regulation are not eligible for funding from the SCAQMD.

SCHEDULE OF EVENTS

Issue #PA2016-05	March 4, 2016
Workshops	April – May 2016
All Applications Due by 1:00 pm	Wednesday, June 1, 2016
Awards Consideration by the Board	September – October 2016
Contract Execution	January 2017

ALL PROPOSALS MUST BE RECEIVED AT THE SCAQMD HEADQUARTERS NO LATER THAN 1:00 P.M. ON WEDNESDAY, JUNE 1, 2016

Postmarks will not be accepted. Fax or email proposals will not be accepted. Proposers may hand deliver proposals to the SCAQMD by submitting the proposal to the SCAQMD reception desk. The proposal will be date and time-stamped and the person delivering the proposal will be given a receipt.

SCHEDULE OF CMP GENERAL WORKSHOPS:

- Wednesday April 20, 2016 10 a.m. to Noon SCAQMD Headquarters, Room CC2 21865 Copley Drive Diamond Bar, CA 91765
- Wednesday May 4, 2016 10 a.m. to Noon SCAQMD Headquarters, Room CC2 21865 Copley Drive Diamond Bar, CA 91765

MARINE VESSEL/SHORE POWER /CHE ELECTRIFICATION WORKSHOP

 Wednesday, April 27, 2016 – 10 a.m. to Noon Port of Los Angeles Board Room 425 South Palos Verdes Street San Pedro, CA 90731

STATEMENT OF COMPLIANCE

Government Code Section 12990 and California Administrative Code, Title II, Division 4, Chapter 5, require employers to agree not to unlawfully discriminate against any employee or applicant because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, sex, or age. A statement of compliance with this clause is included in all SCAQMD contracts.

CONTACT FOR ADDITIONAL INFORMATION

Questions regarding the content or intent of this PA, procedural matters, or locations of workshops should be addressed to:

Lani Montojo Science and Technology Advancement South Coast Air Quality Management District 21865 Copley Drive, Diamond Bar, CA 91765 (909) 396-2231/3252 FAX

SECTION II - WORK STATEMENT/SCHEDULE OF DELIVERABLES

Applicants must sign the Application form indicating their understanding of the requirements for submittal of additional project information to finalize a contract and that all vehicles, engines or equipment must be in operation within eighteen (18) months of contract execution or by May 20, 2018, whichever is earlier. **Unsigned applications will be deemed ineligible and may NOT be considered for funding.**

WORK STATEMENT

The scope of work involves a series of tasks and deliverables that demonstrate compliance with the requirements of the CMP as administered by CARB and the SCAQMD. The project applicant is responsible for developing detailed project plans that address the program criteria. In addition, alternative fuel project applicants must discuss their plan for refueling the proposed vehicles/equipment, and if appropriate, should provide a letter of agreement from their fuel provider (see Application forms).

At a minimum, any contract for funding the proposed project must meet the following criteria:

- Provide emission reductions that are real, quantifiable, enforceable and surplus in accordance with CARB and SCAQMD guidelines.
- Meet the cost-effectiveness limits, as described in Table 1 of this PA.
- Provide at least 30 percent NOx emission reduction for new engine/vehicle purchases and 15 percent for repowers and retrofits, compared to baseline NOx emissions, if NO_x emission reductions are to be considered in the cost-effectiveness calculations.
- Commit that project engines or equipment operate in-service for the full project life, a minimum of three years, and at least 75 percent of annual operation must occur within the SCAQMD. Project life is the number of years used to determine the cost-effectiveness and is equal to the contract term.
- Commit that all vehicles/engines/equipment are in operation within 18 months of contract execution or by May 20, 2018, whichever is earlier.
- Provide for appropriate record-keeping during the project life (i.e., annual mileage, fuel consumption and/or hours of operation).
- Ensure that the project complies with other local, state and federal programs, and resulting emission reductions from a specific project are not required as a mitigation measure to reduce adverse environmental impacts that are identified in an environmental document prepared in accordance with the California Environmental Quality Act or the National Environmental Policy Act.
- If requested, contractor must provide a financial statement and bank reference, or other evidence of financial ability to fulfill contract requirements.
- If requested, contractor must make all equipment and records available to the SCAQMD or CARB for audit and inspections.

DELIVERABLES

The contract will describe how the project will be monitored and what type of information will be included in project progress reports. At a minimum, the SCAQMD expects to receive the following reports:

- 1. <u>Quarterly status reports</u> until the vehicle or equipment purchase, repower or retrofit has been accomplished and in operation. These reports shall include a discussion of any problems encountered and how they were resolved, any changes in the schedule, and recommendations for completion of the project. These progress reports are required before payment for the purchase, repower or retrofit will be made.
- 2. <u>An annual report</u> for each year during the full contract term, or project life, which provides the annual miles or hours of operation, where the vehicle or equipment was operated (75 percent required in-Basin), annual fuel consumption, and operational and maintenance issues encountered and how they were resolved. SCAQMD reserves the right to verify the information provided.

Reporting forms are available online at: <u>www.aqmd.gov/Moyer</u>

SECTION III - PROPOSAL SUBMITTAL REQUIREMENTS

Proposers **must** complete the appropriate application forms, which are included in Appendix A. In addition, Conflict of Interest and Project Cost information, as described below, must also be submitted with the application. It is the responsibility of the applicant to ensure that all information submitted is accurate and complete.

CONFLICT OF INTEREST

Applicant must address any potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the SCAQMD. Although the proposer will not be automatically disqualified by reason of work performed for such firms, the SCAQMD reserves the right to consider the nature and extent of such work in evaluating the proposal. Conflicts of interest will be screened on a case-by-case basis by the SCAQMD General Counsel's Office. Conflict of interest provisions of the state law, including the Political Reform Act, may apply to work performed pursuant to this contract. Please discuss potential conflicts of interest on the Application Statement Form.

PROJECT COST

Applicants must provide cost information that specifies the amount of funding requested and the basis for that request by attaching vendor quotes to the application. Applicants need to inform vendors of the time frame of the award process so that they can <u>estimate</u> prices to the future/projected order/purchase date.

Purchase orders <u>must not</u> be placed for projects until after the date of award approval by the SCAQMD Governing Board. Purchase orders may be placed after SCAQMD Governing Board approval and in advance of a fully executed contract, but these orders are placed at the <u>applicant's risk</u>⁴.

The CMP funds only a percentage of the cost of the low-emission technology based on the type of project. The proposed low-emission technology must be CARB-certified in most cases⁵. No fueling infrastructure, administrative or operational costs will be funded.

All project costs must be clearly indicated in the application. In addition, applicants should be sure to include any sources of cofunding and the amount of each cofunding source in the application. **Proposers are cautioned that the project life period used in calculating emissions reductions will be used to determine the length of their annual reporting obligation.** In other words, a project applicant using a ten-year life for the emissions reduction calculations will be required to operate, track and report activity for the project vehicle for the full ten years. The contract term will also be ten years.

Proposers are not required to calculate a project's cost-effectiveness, although it is helpful to understand your project's cost-effectiveness in order to anticipate the maximum possible grant award that might be recommended. Methodologies for calculating cost-effectiveness are provided in the CARB Moyer Guidelines at

http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_appc_07_11_14.pdf

⁴ All orders placed in advance of a fully executed contract are at the purchaser's own risk.

⁵ Note that an experimental permit from CARB may be considered, but the project will require special CARB approval.

APPLICATION SUBMISSION

All applications must be submitted according to specifications set forth herein. Failure to adhere to these specifications may be cause for rejection of the proposal without evaluation.

<u>Staff Contact Information</u>: SCAQMD staff contacts for each program category are listed in Table 2 below. Applicants are strongly encouraged to contact SCAQMD staff experts to discuss their project prior to submitting an application to ensure program eligibility.

<u>Application Forms</u>: Program application forms are provided in Appendix A. These must be completed and submitted with other required documents (i.e. Business Information Request forms, activity documentation, project quotes, etc.) discussed in the application and below.

A separate Form A-1 is required for each category (i.e., marine, off-road, locomotive, etc.). For example, if an applicant is requesting funding for marine engine repowers and off-road construction equipment, then two (2) separate Form A-1's must be submitted – one for each category. In addition to each Form A-1, the applicable category Form is required for each piece of equipment for which grant funding is requested (i.e., B-1, C-1, etc.). For example:

Example Application Package:

Applicant X plans to submit a request for CMP funding to repower three marine vessels and two locomotive projects. The forms required are:

- Form A-1 for the **marine vessel** projects, which includes:
 - Application Checklist
 - Application Statement
 - Business Information Forms
 - Form D-1 for the first marine vessel repower
 - Form D-1 for the second marine vessel repower
 - Form D-1 for the third marine vessel repower
- Form A-1 for the **locomotive** projects, which includes:
 - Application Checklist
 - Application Statement
 - Business Information Forms
 - Form D-1 for the first locomotive project
 - Form D-1 for the second locomotive project

Business Information Forms: Consists of business information request forms that <u>must</u> be completed and submitted with the Application. Please note, if recommended for an award, you will be required to submit an updated Campaign Contribution Disclosure form at a later date.

<u>Due Date</u> - The proposer shall submit four (4) complete signed copies of the application, as well as an electronic copy of the application and its supporting documents on a CD or flash drive, in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the proposer and the words "Program Announcement #PA2016-05. All proposals/applications shall be submitted in an environmentally friendly format: stapled, not bound, black and white print; no three-ring, spiral or plastic binders, and no card stock or colored paper.

All proposals must be received, either electronically or on paper, no later than <u>1:00 p.m., on</u> <u>June 1, 2016.</u> Postmarks are not accepted as proof of deadline compliance. Faxed or emailed proposals will not be accepted. Proposals must be directed to:

> Procurement Unit South Coast Air Quality Management District 21865 East Copley Drive Diamond Bar, CA 91765

Any correction or resubmission done by the proposer will not extend the submittal due date.

Grounds for Rejection - A proposal may be immediately rejected if:

- It is not prepared in the format described
- It is not signed by an individual authorized to represent the firm
- Does not include current cost quotes, Contractor Statement Forms and other forms required in this PA.

<u>Missing Information</u> – Within thirty (30) business days of the proposal due date, SCAQMD will send letters to applicants regarding missing information. Applicants will have seven (7) days to provide any missing information requested in this letter. Any additional information requests will also have a seven (7) day response deadline.

Disposition of Proposals - The SCAQMD reserves the right to reject any or all proposals. All responses become the property of the SCAQMD. One copy of proposals not selected for funding shall be retained for one year. Additional copies and materials will be returned only if requested and at the proposer's expense.

SECTION IV - PROPOSAL EVALUATION/CONTRACTOR SELECTION CRITERIA

SCAQMD staff will evaluate all submitted proposals and make recommendations to the Governing Board for final selection of project(s) to be funded. Proposals will be evaluated on the cost-effectiveness of NOx, PM10 and ROG reduced, as well as a project's disproportional impact evaluation (discussed below). Be aware that there is a possibility that due to program priorities, cost-effectiveness and/or funding limitations, project applicants may be offered only partial funding, and not all proposals that meet cost-effectiveness criteria may be funded.

At least 50 percent of the SCAQMD's CMP funds must be spent in areas that are most disproportionally impacted by air pollution. SCAQMD uses the following method to meet these requirements:

- 1. All projects must qualify for the Carl Moyer Program by meeting the cost-effectiveness limits established in the Program Announcement.
- 2. All projects will be evaluated according to the following criteria to qualify for funding as a disproportionately impacted area:
 - a) Poverty Level: Detailed socioeconomic information is not included in the 2010 Census. Such data is collected yearly from a small percentage of the population on a rotating

basis by the American Community Survey (ACS). All projects in areas where at least 10 percent of the population falls below the Federal poverty level based on the 2008-2012 ACS data are eligible to be included in this category, and

- b) PM2.5 Exposure: All projects in areas with the highest 15 percent of PM2.5 concentration measured within a 2 km grid will be eligible to be ranked in this category. The highest 15 percent of PM2.5 concentration is 11.10 micrograms per cubic meter and above, on an annual average, or
- c) Air Toxics Exposure: All projects in areas with a cancer risk of 865 in a million and above (based on MATES III estimates) will be eligible to be ranked in this category.

The maximum score is comprised of 40 percent for poverty level and 30 percent each for PM and toxic exposures. Special circumstances exist in some areas, such as the Ports of Long Beach and Los Angeles. Since there are no residents within the ports, poverty ranking could not be established. In this case, the poverty ranking from the adjacent on-shore areas was extended to the port since these populated areas are directly impacted by port activities.

SECTION V - PAYMENT TERMS

For all projects, except shore power projects, full payment will be made upon installation and commencement of operation of the funded equipment. For shore power projects, a progress payment schedule will be established that allows payment upon completion of key milestones, as delineated in the contract.

SECTION VI: SCAQMD STAFF CONTACTS AND ADDITIONAL RESOURCES

The SCAQMD staff contacts are listed in Table 2 by project category. Copies of the Program Announcement, Application Forms and a sample SCAQMD CMP contract may be accessed at: www.aqmd.gov/Moyer.

Project Category	Staff Contact	Phone Number	Email		
On-Road Heavy-Duty Vehicles	Ashkaan Nikravan	(909) 396-3260	anikravan@aqmd.gov		
Off-Road Equipment	Richard Carlson	(909) 396-3996	rcarlson@aqmd.gov		
Cargo Handling Equipment Electrification	Greg Ushijima	(909) 396-3301	<u>gushijima@aqmd.gov</u>		
Marine Vessels	Mark Coleman Von Loveland	(909) 396-3074 (909) 396-3063	<u>mcoleman@aqmd.gov</u> <u>vloveland@aqmd.gov</u>		
Shore Power	Greg Ushijima	(909) 396-3301	gushijima@aqmd.gov		
Locomotives	Connie Day	(909) 396-3055	cday@aqmd.gov		

Table 2: CMP Staff Contacts

WEBSITE LINKS TO CARB RULES THAT AFFECT CMP ELIGIBILITY

On-Road Private (truck and bus) @ http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm

Public/Utility Fleets @ http://www.arb.ca.gov/msprog/publicfleets/publicfleets.htm

In-Use Off-Road (CI) @ http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm

Harbor Craft @ http://www.arb.ca.gov/ports/marinevess/harborcraft.htm

Cargo Handling Equipment @ http://www.arb.ca.gov/ports/cargo/cargo.htm

Shore Power @ http://www.arb.ca.gov/ports/shorepower/shorepower.htm

APPENDIX A

Table of Contents

Each document listed below is linked to SCAQMD's CMP website for efficient download.

- 1. Application Checklist one per applicant.
- 2. Form A-1: General Application (includes Checklist, Application Statement and Business Information Forms). Provide a complete set of Form A-1 documents for each equipment category (i.e., locomotive, marine, off-road, etc.).
- 3. Category Application Form specific to your project category (one per unit, or use excel templates referenced in the form for multiple unit projects)
 - a) Form B-1: On-Road Heavy-Duty Vehicles, New Purchase
 - b) Form B-2: On-Road Heavy-Duty Vehicles, Repower
 - c) Form B-3: Emergency Vehicles (Fire Apparatus)
 - d) Form C-1: Off-Road Equipment Replacement
 - e) Form C-2: Off-Road Equipment (Repower, Repower with Retrofit)
 - f) Form C-3: Off-Road Equipment Retrofit
 - g) Form C-4: Cargo Handling Equipment (CHE) Electrification
 - h) Form D-1: Marine Vessels, Repower
 - i) Form D-2: Marine Vessels, Shore Power
 - j) Form E-1: Locomotives

APPLICATION CHECKLIST

Use this checklist to organize your application. Each of the following application sections is required to be submitted:

A cover letter stating your grant request, how many pieces of equipment and/or engines included in the proposed project, and the funding amount being requested (per engine and for the total project). For applications covering more than one category, organize this information into project category (i.e., marine, locomotive, on-road, etc.)						
This Application Checklist (signed below).						
General Application Form A-1. Provide a separate Form A-1 for each category (i.e., marine, locomotive, etc.) for which grant funding is requested. Form A-1 also includes the following documents:						
 Application Statement (signed and initialed as applicable) Completed and signed Business Information Request Forms 						
Category Application Form specific to your project category (i.e., locomotive, off-road, marine, etc.), along with the following attachments/enclosures:						
Excel Worksheet associated with applicable application form/category (you may use this form for multiple unit projects, if desired)						
Vendor quotes dated no earlier than 90 days prior to the closing date of the Program Announcement						
CARB Executive Orders for each engine. Download at: On-road: <u>http://www.arb.ca.gov/msprog/onroad/cert/cert.php</u> Off-road: <u>http://www.arb.ca.gov/diesel/cv.htm</u>						
Previous two years of historical data documenting usage						

Once completed, please submit one electronic and four paper copies of the assembled package, in accordance with the Application Submittal Instructions.

I understand that all documents, as listed above, are required in order to have a complete application package in order to be considered for funding under the Carl Moyer Program.

Signature

Date

FORM A-1: GENERAL APPLICATION FORM – Submit a separate Form A-1 for <u>each</u> category type (i.e., locomotive, off-road, marine, etc.).

The SCAQMD is accepting applications for projects throughout its jurisdiction. All proposals will be evaluated based on their cost-effectiveness and their disproportionate impact score as discussed in Section IV "Proposal Evaluation/Contract Selection Criteria" contained in Program Announcement #PA2016-05. For additional information about SCAQMD's policies and application information, visit: <u>www.aqmd.gov/Moyer</u>. In general, this program will follow CARB Carl Moyer Program guidelines, which are available at: <u>http://www.arb.ca.gov/msprog/moyer/moyer.htm</u>.

The submittal of an application does not guarantee approval for funding, but will be used to determine the potential emission reductions and eligible grant funding amount for the proposed project. Any equipment purchased prior to project approval by the SCAQMD Governing Board will not be eligible for funding. Applicant may, at their own risk, issue a purchase order for approved equipment prior to contract execution. Other than a purchase order, **no other work shall proceed** until a fully executed contract, i.e. signed by the applicant and SCAQMD Board Chairman and a pre-inspection, is completed.

APPLICANT INFORMATION

	Email	Phone Number	Fax Number
Primary Contact Name:			
Person Authorized to Sign Application and			
Execute Grant Agreement:			

Name of Person who Completed Application:	
What is your position?	
How much are you being paid to complete this application for the owner or to assist in the proposed project?	
What is the source of funds being used to pay you?	
Signature:	
Date:	

Application Statement – Please Read and Sign/Initial as Applicable

All information provided in this application will be used by SCAQMD staff to evaluate the eligibility of this application to receive program funds. SCAQMD staff reserves the right to request additional information and can deny the application if such requested information is not provided by the requested deadline. Incomplete or illegible applications will be returned to applicant or vendor, without evaluation. An incomplete application is an application that is missing information critical to the evaluation of the project.

Initial to indicate acceptance or note "NA" if not applicable (NA) to your project.

I certify to the best of my knowledge that the information contained in this application is true and accurate.
 I understand that all vehicles/equipment, both existing and new, must be made available within the SCAQMD boundaries for inspection, unless otherwise approved by SCAQMD's Project Officer.
The vehicle/engine will be used within the SCAQMD boundaries (with the emission reduction system operating) for at least the projected usage shown in this application, and no less than 75 percent of the time.
I understand that it is my responsibility to ensure that all technologies are either verified or certified by the California Air Resources Board (CARB) to reduce NOx and/or PM pollutants. CARB Verification Letters and/or Executive Orders are attached, as applicable.
I understand that for repower projects, I am required to install the highest level available verified diesel emission control device (VDECS), and that the costs of this device and associated installation are a CMP eligible expense. These costs may be included in the project grant request up to the maximum cost-effectiveness limit.
I understand that there may be conditions placed upon receiving a grant and agree to refund the grant (or pro- rated portion thereof) if it is found that at any time I do not meet those conditions and if directed by the SCAQMD in accordance with the contract agreement.
I understand that, for this equipment, I will be prohibited from applying for any other form of emission reduction credits for Moyer-funded vehicles/engines, including: Emission Reduction Credit (ERC); Mobile Source Emission Reduction Credit (MSERC) and/or Certificate of Advanced Placement (CAP), for all time, from the SCAQMD, CARB or any other Air Quality Management or Air Pollution Control District.
The proposed project has not been funded and is not being considered for Carl Moyer Program funds by another air district, CARB, or any other public agency.
In the event that the vehicle(s)/equipment do not complete the minimum term of any agreement eventually reached from this application, I agree to ensure the equivalent project emissions reductions, or to return grant funds to the SCAQMD as required by the contract.
I have the legal authority to apply for grant funding for the entity described in this application.
I understand that all on-road engines in my fleet that are eligible for a low-NOx software upgrade (reflash) must be reflashed within 60 days of receipt of contract execution. I may self-certify that the reflash has been performed by submitting a receipt of the completed reflash or a picture of the "Low NOx Reflash Label" from the reflashed engine to SCAQMD.
Disclosure of the value of any current financial incentive that directly reduces the project price, including tax credits or deductions, grants, or other public financial assistance for the same engine is required. To avoid double counting of incentives, all tax credits or deductions, grants, or other public financial assistance must be deducted from the CMP request.
I understand that third party contracts are not permitted. A third party may, however complete an application on an owner's behalf. Third parties are required to list how much compensation, if any, they are receiving to prepare the application(s), and to certify that no CMP funds are being used for this compensation.
 I understand that off-road equipment applicants subject to CARB's In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation must submit information regarding fleet size and compliance status. This must include the Diesel Off-Road On-line Reporting System (DOORS) ID of the fleet and the DOORS Equipment Identification Number (EIN) of the funded equipment. All documentation submitted must be signed and dated by the applicant and include language certifying that the fleet list provided is accurate and complete.

I understand that additional project information may be requested during project review and must be submitted prior to contract award.
I understand that all vehicles, engines or equipment funded by this program must be operational within eighteen (18) months of contract execution, or by May 20, 2018, whichever is earlier.
All project applicants must submit documentation that supports the activity claimed in the application (i.e., fuel receipts, mileage logs and/or hour-meter readings covering the last two years). This documentation is attached.
The grant contract language cannot be modified without the written consent of all parties. I have reviewed and accepted the sample contact language.
 I understand that an IRS Form 1099 may be issued to me for incentive funds received under the Moyer Program. I understand that it is my responsibility to determine the tax liability associated with participating in the Moyer Program.
 I understand that an SCAQMD-funded Global Positioning System (GPS) unit will be installed on vehicles/equipment not operating within SCAQMD boundaries full time. I will submit data as requested and otherwise cooperate with all data reporting requirements. I also understand that the additional cost of the GPS unit will be added to the project cost when calculating cost-effectiveness, though the SCAQMD will pay for this system directly.
I understand that the SCAQMD has the right to conduct unannounced inspections for the full project life to ensure the project equipment is fully operational at the activity level committed to by the contract.
I understand that all emission reductions resulting from funded projects will be retired. To avoid double counting of emission reductions, project vehicles and/or equipment may not receive funding from any other government grant program that is designed to reduce mobile source emissions.
I understand that a tamper proof, non-resettable digital hour meter/odometer must be installed on all vehicles/equipment and that the digital hour meter/odometer will record the hours/miles accumulated within the SCAQMD boundaries. This cost is my responsibility.
I understand that any tax credits claimed must be deducted from the CMP request. Please check one: I do not plan to claim a tax credit or deduction for costs funded by the CMP.
 I do plan to claim a tax credit or deduction for costs funded by the CMP. If so, please indicate amount here: \$ I plan to claim a tax credit or deduction only for the portion of incremental costs not funded by the CMP. If so, please indicate amount here: \$

Conflict of Interest

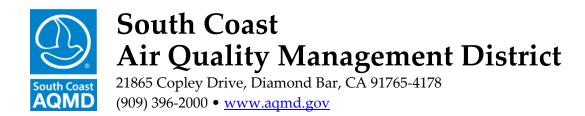
I initialed below to indicate that there are no potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the SCAQMD. **If this bullet is not initialed, I have attached a description to this application of the potential conflict of interest**, which will be screened on a case-by-case basis by the SCAQMD General Counsel's Office. There is no potential conflict of interest: ______ (Please initial if applicable, else attach separate sheet describing the potential conflict.)

Applicant's Signature

Applicant's Name (please print)

Date

Title



Business Information Request

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

If you do not return this information, we will <u>not</u> be able to establish you as a vendor. This will delay any payments and would <u>still</u> necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

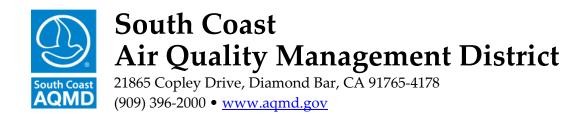
If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Michael B. O'Kelly Chief Financial Officer

DH:tm

Enclosures: Business Information Request Disadvantaged Business Certification W-9 Form 590 Withholding Exemption Certificate Federal Contract Debarment Certification Campaign Contributions Disclosure Direct Deposit Authorization



BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business Check One:	 Individual DBA, Name, County Filed in Corporation, ID No LLC/LLP, ID No Other

REMITTING ADDRESS INFORMATION

Address										
Address										
City/Town										
State/Province					Zip					
Phone	()	-	Ext	Fax	()	-		
Contact					Title					
Email Address										
Payment Name if Different										

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE),

minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below <u>for contracts or purchase orders funded in whole</u> or in part by federal grants and contracts.

- 1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
- 2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
- 3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
- 4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
- 5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
- 6. If subcontracts are to be let, take the above affirmative steps.

<u>Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with</u> <u>SCAQMD Procurement Policy and Procedure:</u>

Check all that apply:	
 Small Business Enterprise/Small Business Joint Venture Local business Minority-owned Business Enterprise 	 Women-owned Business Enterprise Disabled Veteran-owned Business Enterprise/DVBE Joint Venture Most Favored Customer Pricing Certification
Percent of ownership:%	
Name of Qualifying Owner(s):	
State of Colifornia Dublic Works Contractor D	MUCE DE

State of California Public Works Contractor Registration No. ________ MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

NAME

TITLE

TELEPHONE NUMBER

DATE

Definitions

Disabled Veteran-Owned Business Enterprise means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

Joint Venture means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

Local Business means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

Minority-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

"Minority" person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

Small Business Enterprise means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
 - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
 - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

Small Business Joint Venture means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

Women-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

Most Favored Customer as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

	1 Nari	e (as snown on your income tax return), warne is required on this line, do not leave this line blank.				
~	2 Busi	iness name/disregarded entity name, if different from above				
Print or type See Specific Instructions on page	🗌 In	ck appropriate box for federal tax classification; check only one of the following seven boxes: dividual/sole proprietor or C Corporation S Corporation Partnership ngle-member LLC	Trust/estate	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):		
f, b	Li	mited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnersh	nip) 🕨	Exempt payee code (if any)		
Print or type Instruction		ote. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the tax classification of the single-member owner.	Exemption from FATCA reporting code (if any)			
E E	0	ther (see instructions) >>		(Applies to accounts maintained outside the U.S.)		
pecific	5 Add	ress (number, street, and apt. or suite no.)	Requester's name	and address (optional)		
See SI	6 City	state, and ZIP code				
ľ	7 List	account number(s) here (optional)				
Part		Taxpayer Identification Number (TIN)				
		N in the appropriate box. The TIN provided must match the name given on line 1 to avo		ecurity number		
resider entities	nt alier s, it is y	nolding. For individuals, this is generally your social security number (SSN). However, for a sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other your employer identification number (EIN). If you do not have a number, see How to get				
TIN on	page	3.	or			
		ccount is in more than one name, see the instructions for line 1 and the chart on page 4	4 for Employ	er identification number		
guideli	nes on	whose number to enter.		-		
Part		Certification				
Under	penalt	ies of perjury, I certify that:				
1. The	numb	er shown on this form is my correct taxpayer identification number (or I am waiting for a	a number to be	issued to me); and		
Sen	2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and					
3. Iam	I am a U.S. citizen or other U.S. person (defined below); and					
4. The	I. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.					
becaus interest genera	se you t paid, Illy, pa	instructions. You must cross out item 2 above if you have been notified by the IRS that have failed to report all interest and dividends on your tax return. For real estate transat acquisition or abandonment of secured property, cancellation of debt, contributions to yments other than interest and dividends, you are not required to sign the certification, I on page 3.	ctions, item 2 d an individual re	oes not apply. For mortgage etirement arrangement (IRA), and		
Sign Here		ignature of .S. person ► Dat	te Þ			

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted. Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- · Form 1099-INT (interest earned or paid)
- · Form 1099-DIV (dividends, including those from stocks or mutual funds)

· Form 1099-MISC (various types of income, prizes, awards, or gross proceeds) . Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)

· Form 1099-S (proceeds from real estate transactions)

· Form 1099-K (merchant card and third party network transactions)

. Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)

- · Form 1099-C (canceled debt)
- · Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

- If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.
- By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

 Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See What is FATCA reporting? on page 2 for further information.

Cat. No. 10231X

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

An individual who is a U.S. citizen or U.S. resident alien;

 A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;

· An estate (other than a foreign estate); or

A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

 In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;

 In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and

 In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

 You do not certify your TIN when required (see the Part II instructions on page 3 for details), 3. The IRS tells the requester that you furnished an incorrect TIN,

 The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

 You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See Exempt payee code on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see Special rules for partnerships above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See Exemption from FATCA reporting code on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. Individual. Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. Sole proprietor or single-member LLC. Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation. Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. Other entities. Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. Disregarded entity. For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the entity is also complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code

 Generally, individuals (including sole proprietors) are not exempt from backup withholding.

 Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.

 Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

 Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2-The United States or any of its agencies or instrumentalities

3-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5-A corporation

6-A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8-A real estate investment trust

9-An entity registered at all times during the tax year under the Investment Company Act of 1940

10-A common trust fund operated by a bank under section 584(a)

11-A financial institution

12-A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947 The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for	THEN the payment is exempt for
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B-The United States or any of its agencies or instrumentalities

C-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E-A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G-A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I-A common trust fund as defined in section 584(a)

J-A bank as defined in section 581

K_A broker

L-A trust exempt from tax under section 664 or described in section 4947(a)(1) M-A tax exempt trust under a section 403(b) plan or section 457(a) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by Identification Number, to apply for an TIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-EQ-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see Exempt payee code earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
 Individual Two or more individuals (joint account) 	The individual The actual owner of the account or, if combined funds, the first individual on the account'
 Custodian account of a minor (Uniform Gift to Minors Act) 	The minor ²
 a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law 	The grantor-trustee' The actual owner'
 Sole proprietorship or disregarded entity owned by an individual 	The owner ^a
 Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i) (A)) 	The grantor*
For this type of account:	Give name and EIN of:
 Disregarded entity not owned by an individual 	The owner
8. A valid trust, estate, or pension trust	Legal entity
 Corporation or LLC electing corporate status on Form 8832 or Form 2553 	The corporation
 Association, club, religious, charitable, educational, or other tax- exempt organization 	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
 Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments 	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i) (B))	The trust

¹List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

Circle the minor's name and furnish the minor's SSN

- ³You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.
- ⁴List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see Special rules for partnerships on page 2.

*Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN.
- · Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

YEAR

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CALIFORNIA FORM

500

	2015 Withholding Exemption Certificate			590
Th	he payee completes this form and submits it to the withholding agent.			
Wi	Vithholding Agent (Type or print)			
Na	lame			
_	layee			
Na	lame	□ SSN o	r ITIN 🗆 I	FEIN CA Corp no. CA SOS file no.
Adv	ddress (apt./ste., room, PO Box, or PMB no.)			
Add	daress (apt/ste., room, PO box, or PMb ho.)			
City	ity (If you have a foreign address, see instructions.)		State	ZIP Code
Exe	xemption Reason			<u> </u>
	Check only one reason box below that applies to the payee.			
	by checking the appropriate box below, the Payee certifies the reason for the exemption fror	n the Cal	ifornia	income tax withholding
rec	equirements on payment(s) made to the entity or individual.			
	Individuals — Certification of Residency: I am a resident of California and I reside at the address shown above. If I become a notify the withholding agent. See instructions for General Information D, Definitions		dent at	any time, I will promptly
	Corporations: The corporation has a permanent place of business in California at the address she California Secretary of State (SOS) to do business in California. The corporation wi corporation ceases to have a permanent place of business in California or ceases t the withholding agent. See instructions for General Information D, Definitions.	ill file a C	alifornia	a tax return. If this
	Tax-Exempt Entities: The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 (insert letter) or Internal Revenue Code Section 501(c) (insert number). If this entity ceases to be exempt from tax, I will promptly notify the withholding agent. Individuals cannot be tax-exempt entities.			
	Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pet The entity is an insurance company, IRA, or a federally qualified pension or profit-si			naring Plans:
	California Trusts: At least one trustee and one noncontingent beneficiary of the above-named trust is California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a notify the withholding agent.			
	, , , , , , , , , , , , , , , , , , , ,			
	Nonmilitary Spouse of a Military Servicemember: I am a nonmilitary spouse of a military servicemember and I meet the Military Spour requirements. See instructions for General Information E, MSRRA.	use Resid	lency F	lelief Act (MSRRA)
CF	ERTIFICATE OF PAYEE: Payee must complete and sign below.			
Un	Inder penalties of perjury, I hereby certify that the information provided in this document is, orrect. If conditions change, I will promptly notify the withholding agent.	to the be	st of m	y knowledge, true and
Pa	Payee's name and title (type or print)	Telephon	e ()
Pa	Payee's signature ►		Date	
	For Privacy Notice, get FTB 1131 ENG/SP. 7061153			Form 590 c2 2014

2015 Instructions for Form 590

Withholding Exemption Certificate References in these instructions are to the California Revenue and Taxation Code (R&TC).

General Information

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For information on California backup withholding, go to **ftb.ca.gov** and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to edd.ca.gov or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a Seller of California real estate. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from real estate withholding.

The following are excluded from withholding and completing this form:

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.

- Payments to nonresidents for royalties from activities sourced to California.
- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed certificate on the preprinted form, the withholding agent may accept as a substitute certificate a letter from the payee explaining why the payee is not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number. The withholding agent must retain a copy of the certificate or substitute for at least four years after the last payment to which the certificate applies, and provide it upon request to the FTB.

For example, if an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

D Definitions

For California non-wage withholding purposes, nonresident includes all of the following:

- · Individuals who are not residents of
- California. • Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or if it is a foreign corporation qualified to transact intrastate business by the CA SOS. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

Domicile is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

Specific Instructions

Payee Instructions

Enter the withholding agent's name

Enter the payee's information, including the taxpayer identification number (TIN) and check the appropriate TIN box.

You must provide an acceptable TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

Private Mail Box (PMB) - Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

Foreign Address - Enter the information in the following order: City, Country, Province/ Region, and Postal Code. Follow the country's practice for entering the postal code. Do not abbreviate the country's name.

Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

Withholding Agent Instructions

Keep Form 590 for your records. Do not send this form to the FTB unless it has been specifically requested.

For more information, contact Withholding Services and Compliance, see Additional Information

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- The corporation ceases to have a permanent place of business in California or ceases to
- be qualified to do business in California. The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place of business in California.
- The tax-exempt entity loses its tax-exempt status

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

Additional Information

For additional information or to speak to a representative regarding this form, call the Withholding Services and Compliance telephone service at:

Telephone: 888.792.4900 916.845.4900 916.845.9512 Fax:

OR write to: WITHHOLDING SERVICES AND **COMPLIANCE MS F182** FRANCHISE TAX BOARD PO BOX 942867 SACRAMENTO CA 94267-0651

You can download, view, and print California tax forms and publications at ftb.ca.gov.

OR to get forms by mail write to:

TAX FORMS REQUEST UNIT FRANCHISE TAX BOARD PO BOX 307 RANCHO CORDOVA CA 95741-0307

For all other questions unrelated to withholding or to access the TTY/TDD numbers, see the

information below. Internet and Telephone Assistance

Website: fth ca no

WODSHO.	no.ca.yov
Telephone:	800.852.5711 from within the
	United States
	916.845.6500 from outside the
	United States
TTY/TDD:	800.822.6268 for persons with

hearing or speech impairments Asistencia Por Internet y Teléfono

- Sitio web: **ftb.ca.gov** Teléfono: 800.852.5711 dentro de los Estados Unidos 916.845.6500 fuera de los Estados Unidos
- 800.822.6268 para personas con TTY/TDD: discapacidades auditivas o del habla

Page 2 Form 590 Instructions 2014



CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor *plus* contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website (<u>www.aqmd.gov</u>). The list of current MSRC members/alternates can be found at the MSRC website (<u>http://www.cleantransportationfunding.org</u>).

<u>SECTION I.</u>

Contractor (Legal Name): _____

DBA, Name_____, County Filed in_____

Corporation, ID No._____

LLC/LLP, ID No.

List any parent, subsidiaries, or otherwise affiliated business entities of Contractor: *(See definition below).*

SECTION II.

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

____ Yes

No If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.

Campaign Contributions Disclosure, continued:

Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution

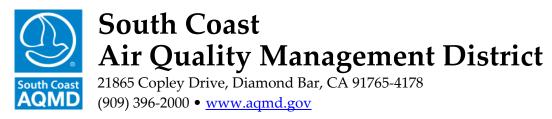
I declare the foregoing disclosures to be true and correct.

By:_____

Title:_____

Date:_____

		DEFINITIONS
		Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)
(1)		subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing han 50 percent of the voting power of another corporation.
(2)	organiz	vise related business entity. Business entities, including corporations, partnerships, joint ventures and any other zations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if e of the following three tests is met:
	(A)	One business entity has a controlling ownership interest in the other business entity.
	(B)	There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:
	(iii)	 (i) The same person or substantially the same person owns and manages the two entities; (ii) There are common or commingled funds or assets; The business entities share the use of the same offices or employees, or otherwise share activities, resources or
		personnel on a regular basis; (iv) There is otherwise a regular and close working relationship between the entities; or
	(C)	A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling
		owner in the other entity.



Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

Individual (Employee, Governing Board Member)
 Vendor/Contractor

Changed Information

New RequestCancel Direct Deposit

STEP 2: Payee Information

Last Name	First Name		Middle Initial	٦	Title
Vendor/Contractor Business Name (if applicable)					
Address			Aportmost or B (mbor
Address			Apartment or P.C	J. BOX NUI	hiber
City		State	Zip		Country
Taxpayer ID Number	Telephone Number			Email Add	dress

Authorization

- 1. I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- 2. This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- 3. I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

	Name of Bank/Institution					
lere						
check H	Account Holder Name(s)					
Staple Voided Check Here	Saving Checking	Account Number		Routing Number		
taple V	Bank Representative Printed Name		Bank Representative Signature		Date	
S	ACCOUNT HOLDER SIGNATURE:				Date	

To be Completed by your Bank

For SCAQMD Use Only

Input By

Date



FORM B-1: ON-ROAD HEAVY-DUTY VEHICLE - NEW PURCHASE

If you have any questions regarding this program or the application process, please contact **Ashkaan Nikravan** by phone at **(909) 396-3260** or by email at: <u>anikravan@aqmd.gov</u>.

For on-road heavy-duty vehicle new purchase projects, only vehicles with technologies that are certified at least 30 percent below the 0.20 NOx standard, such as electric vehicles or engines certified to the low-NOx emission standard (0.02 g/bhp-hr), are eligible for CMP funding.

Please complete one Form B-1 for each piece of equipment. For multiple unit requests, you may download the Form B-1 multiple-unit spreadsheet from <u>www.aqmd.gov/Moyer</u> in lieu of filling out multiple B-1 forms.

Part 1: Existing Vehicle Information

Company name/ Organization name/ Individual name:				
Equipment Identifier (Company ID or Unit #):			
Is the vehicle location address the same as the applicant address? Yes NO (If not, please provide vehicle address below)				
Street Address:				
City:				
Zip Code:				
Vehicle type (Solid Waste Collection Vehicle, Stop-and-Go Street Sweeper, Urban Transit Bus, School Bus, Other Medium-Heavy Duty Vehicle (GVWR 14,001-33,000 lbs), Other Heavy-Heavy Duty Vehicle (GVWR >33,000 lbs), Other Transit Vehicle):				
Project Life (in years): Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.				
Vehicle Make: Vehicle GVWR:				
Vehicle Model: Is this a public fleet vehicle? Yes No				
Vehicle Model Year: Registered Owner:				
Department of Transportation Number (if interstate):				
California Highway Patrol CA Number (if applicable):				
Projected Year of New Vehicle Purchase:				



Part 2. Fleet Rule Status

CARB rules and regulations listed below severely limit, and in some cases eliminate, funding opportunities for certain vehicle types. In order to ensure eligibility, please confirm your project provides emission reductions that are *surplus* to CARB regulatory requirements by contacting SCAQMD's Project Officer for this category, Ashkaan Nikravan by phone at (909) 396-3260 or by email at: <u>anikravan@aqmd.gov</u>.

 ARB Rule Applicability (Check One): Fleet Rule for Transit Agencies (Urban Buses & Transit Fleet Vehicles) SWCV Rule (Solid Waste Collection Vehicles, Excluding Transfer Trucks) Fleet Rule for Public Agencies & Utilities (Municipal & Utility Vehicles) Port Truck Regulation (Port & Drayage Trucks) On-Road Private Truck and Bus Regulation (All diesel or alternative diesel – fueled vehicles with a GVWR > 14,000 lbs operating in CA) IF CHECKED PLEASE COMPLETE SECTION 3. None. Project is exempt from CARB Rules (supporting documentation validating exemption from any CARB rule is attached).
Is supporting documentation demonstrating compliance with the applicable CARB rule included in this application?

(Applications submitted without supporting documentation that demonstrates an applicant's current fleet compliance status will be deemed incomplete).

Part 3. Existing Vehicle Compliance Applicability – Private Fleets Only

What is the GVWR for this vehicle?

8,501 to 14,000*

 \square 14,001 to 26,000

26,001 or greater

What is your current fleet size? (Should reflect all diesel fuel vehicles with a GVWR greater than 14,000 lbs.)

If applicable did you register your fleet through ARB's TRUCRS Database by January 31, 2016?

Yes, please provide a copy of the Compliance Certificate from the TRUCRS Database.

No

*Note: On-road heavy-duty diesel vehicles with this GVWR range will be considered for CMP funding on a case-by-case basis.



Part 4. Activity Information

Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline, or existing, equipment. Applicants requesting evaluation based on fuel consumption <u>MUST</u> provide <u>both</u> mileage and fuel records from the past 24 months. Supporting documentation may be in the form of maintenance records, fuel receipts, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months. No such documentation is required for project evaluations based solely on mileage.

Total Annual Miles Traveled:	or Gallons of Fuel Used:		
Percent Operation within CA:%	Percent Operation within District:%		

Part 5. New Vehicle's Engine Information

ARB Certification Executive Order (EO) Number:

NOTE: The proposed engine for the project must be consistent with the **Intended Service Class** per the EO (MHD Intended Service Class engines **cannot** be used for projects which have the HHD vehicle classifications). Applicant **must ATTACH a copy** of the referenced Executive Order with the application. Download the EO at: <u>http://www.arb.ca.gov/msprog/onroad/cert/cert.php</u>

Propulsion System Engine Make:	Propulsion System Engine Model Year:
Propulsion System Engine Model:	Fuel Type (Fuel Cell, Battery, etc.) :
Engine Family:	

Part 6. Funding Information

New Vehicle Cost (including tax): \$_____

Note: You <u>MUST</u> attach a written estimate from the equipment vendor documenting the cost of the new vehicle; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.

Applicant Grant Request per unit: \$

New Equipment Vendor (name, address and phone):



FORM B-2: ON-ROAD HEAVY-DUTY VEHICLE - REPOWER

If you have any questions regarding this program or the application process, please contact **Ashkaan Nikravan** by phone at (909) 396-3260 or by email at: <u>anikravan@aqmd.gov</u>.

For On-Road vehicle repower projects, only alternative fuel engines that provide at least a 15 percent NOx reduction are eligible for funding, with the single exception of emergency vehicles and equipment (use Form B-3).

Please complete one Form B-2 for each piece of equipment. For multiple unit requests, you may download the Form B-2 multiple-unit spreadsheet from <u>www.aqmd.gov/Moyer</u> in lieu of filling out multiple B-2 forms.

Part 1: Existing Vehicle Information

Company name/ Organization name/ Individual name:		
Equipment Identifier (Company ID or Unit #):		
Is the vehicle location address the same as the applicant address? Yes No, (please provide vehicle address below)		
Street Address:		
City:		
Zip Code:		
Vehicle type (Solid Waste Collection Vehicle, Stop-and-Go Street Sweeper, School Bus, Other Medium-Heavy Duty Vehicle (GVWR 14,001-25,999 lbs), Other Heavy-Heavy Duty Vehicle):		
Project Life: years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.		
Vehicle Identification Number (VIN):		
Vehicle License Plate:		
Vehicle Make:	Vehicle GVWR:	
Vehicle Model:	Is this a public fleet vehicle? Yes No	
Vehicle Model Year:	Registered Owner:	
Department of Transportation Number (if interstate):		
California Highway Patrol CA Number (if applicable):		
Projected Year of Repower Completion:		



Part 2. Fleet Rule Status

ARB Rule Applicability (Check One):		
NOTE: The CARB rules listed below severely limit, and in some cases eliminate, funding opportunities		
for certain vehicle types. In order to ensure eligibility, Please confirm your project provides emission		
reductions that are surplus to CARB regulatory requirements by contacting SCAQMD staff as indicated		
in Program Announcement #PA2016-05.		
Fleet Rule for Transit Agencies (Urban Buses & Transit Fleet Vehicles)		
SWCV Rule (Solid Waste Collection Vehicles, Excluding Transfer Trucks)		
Fleet Rule for Public Agencies & Utilities (Municipal & Utility Vehicles)		
Port Truck Regulation (Port & Drayage Trucks)		
On-Road Private Truck and Bus Regulation (All diesel or alternative diesel – fueled vehicles		
with a GVWR > 14,000 lbs operating in CA) IF CHECKED PLEASE COMPLETE		
SECTION 3.		
None. Project is exempt from CARB Rules/Regulations (supporting documentation validating		
exemption from any CARB rule is attached)		
Is supporting documentation demonstrating compliance with the applicable CARB rule included in this		
application? Yes No		
(Applications submitted without supporting documentation that demonstrates an applicant's		
current fleet compliance status will be deemed incomplete).		

Part 3. Existing Vehicle Compliance Applicability – Private Fleets Only

 What is the GVWR for this vehicle?
 8,501 to 14,000*

 14,001 to 26,000
 14,001 to 26,000

 26,001 or greater
 26,001 or greater

 *Note: On-road heavy-duty diesel vehicles with this GVWR range will be considered for CMP funding on a case-by-case basis.
 What is your current fleet size? (Should reflect all diesel fuel vehicles with a GVWR greater than 14,000 lbs.)

 If applicable did you register your fleet through ARB's TRUCRS Database by January 31, 2016?

Yes, please provide a copy of the Compliance Certificate from the TRUCRS Database.

Part 4. Activity Information

Please provide projected annual usage for the new engine over the proposed life of the project. This projection should be based on actual usage data for the baseline, or existing, vehicle/engine. Applicants requesting evaluation based on fuel consumption <u>MUST</u> provide <u>both</u> mileage and fuel records from the past 24 months. Supporting documentation may be in the form of maintenance records, fuel receipts, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months. No such documentation is required for project evaluations based solely on mileage.

Total Annual Miles Traveled: or	Gallons of Fuel Used:
Percent Operation within CA:%	Percent Operation within District:%



Part 5. Baseline Engine Information

Fuel Type:	Engine Year:	
Engine Make:	Engine Serial No.:	
Engine Model:	Engine Family:	
ARB Certification Executive Order (EO) Number:		
Download the EO at: <u>http://www.arb.ca.gov/msprog/onroad/cert/cert.php</u>		

Part 6. New Reduced-Emission Engine Information

Fuel Type:	Engine Year:
Engine Make:	Engine Family:
Engine Model:	Engine Horse Power:

ARB Certification Executive Order (EO) Number:

NOTE: The proposed engine for the project must be consistent with the Intended Service Class per the EO (MHD Intended Service Class engines cannot be used for projects which have the HHD vehicle classifications). Applicant must ATTACH a copy of the referenced Executive Order with the application. Download the EO at: <u>http://www.arb.ca.gov/msprog/onroad/cert/cert.php</u>

Part 7. Funding Information

Note: You <u>MUST</u> attach a written estimate from the equipment vendor documenting the cost of the new equipment; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.

New Engine Cost:

New Engine Installation Cost:

Engine Core Charge (optional):

Grant Request: \$

New Engine Vendor:

New Engine Installer:



FORM B-3: EMERGENCY VEHICLES (FIRE APPARATUS)

Eligible Emergency Vehicle (Fire Apparatus) projects are those in which a new or used replacement vehicle with an engine meeting the current model year California emission standard replaces an older, more polluting fire apparatus. The older, replaced vehicle must be destroyed. A fire truck reuse option is also available, which is also known as a "2 for 1 replacement". The fire truck reuse option allows fire departments to give away the existing old vehicle and destroy another older vehicle in its place.

If you have any questions regarding this program or the application process, please contact **Ashkaan Nikravan** by phone at (**909**) **396-3260** or by email at: <u>anikravan@aqmd.gov</u>.

Please complete one Form B-3 for each piece of equipment. For multiple unit requests, you may download the Form B-3 multiple-unit spreadsheet from <u>www.aqmd.gov/Moyer</u> in lieu of filling out multiple B-3 forms.

art 1a. Existing Venere mormation		
Company name/ Organization name/ Individual name:		
Equipment Identifier (Company ID or Unit #):		
Is the vehicle location address the same as the applicant address? Yes No, (please provide vehicle address below)		
Street Address:		
City: Zip Code:		
Vehicle type (Solid Waste Collection Vehicle, Stop-and-Go Street Sweeper, School Bus, Other Medium-Heavy Duty Vehicle (GVWR 14,001-25,999 lbs), Other Heavy-Heavy Duty Vehicle):		
Project Life: years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.		
Vehicle Identification Number (VIN):		
Vehicle License Plate:		
Vehicle Make:	Vehicle GVWR:	
Vehicle Model:	Is this a public fleet vehicle? Yes No	
Vehicle Model Year:	Registered Owner:	
Department of Transportation Number (if interstate):		
California Highway Patrol CA Number (if applicable):		
I have attached proof of California registration for the past 24-months and a copy of the Title, proving ownership (without lien holder) for each project vehicle. YES NO (circle one) (if not, why not?)		

Part 1a: Existing Vehicle Information



Part 1b: 2nd Existing Vehicle Information (only required if proposing a "2 for <u>1" Replacement Project)</u>

Company name/ Organization name/ Individual nam	ne:
Equipment Identifier (Company ID or Unit #):	
Is the vehicle location address the same as the appli- vehicle address below)	cant address? 🗌 Yes 🗌 No, (please provide
Street Address:	
City:	
Zip Code:	
Vehicle type (Solid Waste Collection Vehicle, Stop Medium-Heavy Duty Vehicle (GVWR 14,001-25,9	
Project Life: years. Equipment must operate and the reporting term.	for this full life; this life is equivalent to the contract
Vehicle Identification Number (VIN):	
Vehicle License Plate:	
Vehicle Make:	Vehicle GVWR:
Vehicle Model:	Is this a public fleet vehicle? Yes No
Vehicle Model Year:	Registered Owner:
Department of Transportation Number (if interstate)):
California Highway Patrol CA Number (if applicab	le):
Projected Year of Repower Completion:	

Part 2. CARB Fleet Rule Self-Certification Statement

This is to certify that the project vehicle(s) being submitted for funding under this category are exempt from ARB Regulations based on the fact that they are classified as authorized emergency vehicle as described under California Vehicle Code Sections 27156.2 and 165.

 Signature:
 Date:



Part 3. Activity Information

Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline, or existing, equipment. Applicants requesting evaluation based on fuel consumption <u>MUST</u> provide <u>both</u> mileage and fuel records from the past 24 months. Supporting documentation may be in the form of maintenance records, fuel receipts, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months. No such documentation is required for project evaluations based solely on mileage.

Total Annual Miles Traveled: 0	r Gallons of Fuel Used:
Percent Operation within CA:%	Percent Operation within District:%

Part 4. Baseline Engine Information

Fuel Type:	Engine Year:
Engine Make:	Engine Serial No.:
Engine Model:	Engine Family:
ARB Certification Executive Order (EO) Number: _ Download the EO at: <u>http://www.arb.ca.gov/mspro</u>	

Part 5. New Reduced-Emission Engine Information

Fuel Type:	Engine Year:
Engine Make:	Engine Family:
Engine Model:	Engine Horse Power:

ARB Certification Executive Order (EO) Number:

The proposed engine for the project must be consistent with the Intended Service Class per the EO (MHD Intended Service Class engines cannot be used for projects which have the HHD vehicle classifications). Applicant must ATTACH a copy of the referenced Executive Order with the application. Download the EO at: <u>http://www.arb.ca.gov/msprog/onroad/cert/cert.php</u>



Part 6. Funding Information

Note: You <u>MUST</u> attach a written estimate from the equipment vendor documenting the cost of the new equipment; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.

New Engine Cost:

New Engine Installation Cost:

Engine Core Charge (optional):

Grant Request: \$

New Engine Vendor:

New Engine Installer:



South Coast Air Quality Management District Off-Road Equipment Replacement Application Form C-1

FORM C-1: OFF-ROAD EQUIPMENT REPLACEMENT

If you have any questions regarding this program or the application process, please contact **Richard Carlson** by phone at (909) 396-3996 or by email at: <u>rcarlson@aqmd.gov</u>.

Large fleets subject to CARB's In-Use Off-Road Equipment regulation are no longer eligible for funding from the SCAQMD.

Please complete one Form C-1 for each piece of equipment. For multiple unit requests, you may download the Form C-1 multiple-unit spreadsheet from <u>www.aqmd.gov/Moyer</u> in lieu of filling out multiple C-1 forms.

Part 1: Existing Equipment Information (Baseline)

Company name/ Organization name/ Individual name:
Is equipment currently subject to CARB's Off-Road Regulation? Yes No
Off-road equipment applicants subject to CARB's In-Use Off-Road Diesel Vehicle Regulation must submit their DOORS fleet compliance snapshot and vehicle list. You may contact the DOORS hotline at (877) 593-6677 for assistance.
Baseline Equipment Identifier (Company ID or Unit #):
What is the primary function of this equipment?
Has this equipment received Carl Moyer Program funds in the past?
Is the vehicle location address the same as the applicant address? Yes No
If "No", please provide vehicle address here:
Is existing equipment in operable condition?
How long has applicant owned the existing piece of equipment?
Baseline Equipment Type (e.g. tractor, scraper, roller, loader, etc.):
Number of Main/Front Engines on this Unit?
Number of Auxiliary/Rear Engines on this Unit?
Baseline Equipment Serial Number:
Baseline Equipment Make & Model: Make: Model:
Baseline Equipment Model Year:
Is 2 for 1 Replacement Applied? YES or NO (circle one)
Is this vehicle used in Agricultural operation? YES or NO (circle one)
If Yes, What percent of the time of the equipment used in Agricultural operations?%
Does the existing equipment have a functioning, non- resettable hour meter?
Proposed Project Life (same as contract term/how long you must operate equipment): years



Part 2: Existing (baseline) Engine Information (one section for each engine)

Engine Type: Alin (Front) -OR- Aux	iliary (Rear) # <u>of</u>
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: Main (Front) -OR- Aux	iliary (Rear) # <u>of</u>
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: Aux	iliary (Rear) # <u>of</u>
Engine Type: Aux Main (Front) -OR- Aux	iliary (Rear) # <u>of</u> Baseline Engine Make:
Fuel Type:	Baseline Engine Make:
Fuel Type: Baseline Engine Model:	Baseline Engine Make: Baseline Engine Year:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity in the used to docu	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity in the used to docu	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit.
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity Engine Type: Main (Front) -OR- Aux	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit. iliary (Rear) #of
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit. iliary (Rear) #of Baseline Engine Make:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) mless the fuel tank is dedicated for the use of this single unit. iliary (Rear) #of Baseline Engine Make: Baseline Engine Year:



Part 3: New Equipment Information

New Equipment Type (e.g. tractor, scraper, roller, loader, etc.):

New Equipment Make:

New Equipment Model: Equipment

New Equipment Model Year:

of Main/Front Engines:

of Auxiliary/Rear Engines:

Percent Operation in California:

Percent Operation within the South Coast Air Quality Management District (%):

Part 4: New Equipment Vendor Information

Name and location of dealership assisting with this equipment:

Equipment Vendor Contact:

Equipment Vendor Phone:

Part 5: New Engine Information (one section for each engine)

Engine Type: Main (Front) -OR- Aux	iliary (Rear) # <u>of</u>
Fuel Type:	New Engine Make:
New Engine Model:	New Engine Year:
Engine Serial No.:	New Engine Horsepower:
New Engine Tier:	New Engine Family:
Annual activity in units of hour per year: (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: Main (Front) -OR- Auxiliary (Rear) #	
Fuel Type:	New Engine Make:
	New Lingine Make.
New Engine Model:	New Engine Year:
New Engine Model: Engine Serial No.:	
	New Engine Year:



Part 5: New Engine Information (1 section for each engine), cont'd.

Engine Type: Alin (Front) -OR- Aux	iliary (Rear) # <u>of</u>
Fuel Type:	New Engine Make:
New Engine Model:	New Engine Year:
Engine Serial No.:	New Engine Horsepower:
New Engine Tier:	New Engine Family:
Annual activity in units of hour per year: (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: Main (Front) -OR- Aux	iliary (Rear) # <u>of</u>
Fuel Type:	New Engine Make:
New Engine Model:	New Engine Year:
Engine Serial No.:	New Engine Horsepower:
New Engine Tier:	New Engine Family:
Annual activity in units of hour per year:	

Part 6: Funding/Cost Information for this Repower Project

You <u>MUST</u> attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.

Number of engines for this Unit? Main (Front) Engine(s):Auxiliary (Rear) Engine(s):
New Replacement Unit Cost: \$
Tax: \$
Total Cost: \$
Applicant Co-Funding Amount (if any): \$
Applicant Grant Request Amount: \$



FORM C-2: OFF-ROAD EQUIPMENT REPOWER & RETROFIT (use form C-3 for Retrofit-Only projects)

All off-road repower projects must include installation of the highest level CARB-verified retrofit device if one is available. Repower projects are not disqualified from participation in the Carl Moyer Program if retrofit devices are not available, technically infeasible or unsafe. If installation of a retrofit device is infeasible or unsafe you <u>MUST</u> attach documentation in accordance with CARB requirements, as summarized at: <u>http://www.arb.ca.gov/msprog/ordiesel/vdecssafety.htm</u>.

If you have any questions regarding this program or the application process, please contact **Richard Carlson** by phone at (**909**) **396-3996** or by email at: <u>rcarlson@aqmd.gov</u>.

Note that Large Off-Road Fleets are no longer eligible for SCAQMD funding. Please complete one Form C-2 for each piece of equipment. For multiple unit requests, you may download the Form C-2 multiple-unit spreadsheet from <u>www.aqmd.gov/Moyer</u> in lieu of filling out multiple C-2 forms.

Part 1: Equipment Information

Company name/ Organization name/ Individual name:
Is equipment currently subject to CARB's Off-Road Regulation? Yes No Off-road equipment applicants subject to CARB's In-Use Off-Road Diesel Vehicle Regulation must submit their DOORS fleet compliance snapshot and vehicle list. You may contact the DOORS hotline at (877) 593-6677 for assistance.
Baseline Equipment Identifier (Company ID or Unit #):
What is the primary function of this equipment?
Has this equipment received Carl Moyer Program funds in the past?
Is the vehicle location address the same as the applicant address? Yes No. If "No", provide vehicle address here:
Is existing equipment in operable condition?
How long has applicant owned the existing piece of equipment?
Equipment Type (e.g. tractor, scraper, roller, loader, etc.):
Number of Main Engines on this Unit?
Number of Auxiliary Engines on this Unit?
Equipment Serial Number or VIN:
Baseline Equipment Make & Model: Make: Model:
Equipment Model Year:
Is this vehicle used in Agricultural operation? Yes No
If Yes, What percent of the time of the equipment used in Agricultural operations?%
Does the existing equipment have a functioning, non- resettable hour meter?
Proposed Project Life (same as contract term/how long you must operate equipment): years



Part 2: Existing Engine Information (one section for each engine)

Method proposed for rendering the baseline engin	e(s) inoperable:
Engine Type: Main (Front) -OR- Aux	xiliary (Rear) #
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year:	(hr/yr) unless the fuel tank is dedicated for the use of this single unit.
Engine Type: Aux Main (Front) -OR- Aux	xiliary (Rear) #
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
	unless the fuel tank is dedicated for the use of this single unit.
Engine Type: Main (Front) -OR- Aux	ciliary (Rear) #
Engine Type: Aux Main (Front) -OR- Aux Fuel Type:	kiliary (Rear) # Baseline Engine Make:
Engine Type: Main (Front) -OR- Aux Fuel Type: Baseline Engine Model:	kiliary (Rear) # Baseline Engine Make: Baseline Engine Year:
Engine Type: Main (Front) -OR- Aux Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	kiliary (Rear) # Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower:
Engine Type: Main (Front) -OR- Aux Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity	kiliary (Rear) #of Baseline Engine Make:
Engine Type: Main (Front) -OR- Aux Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity	kiliary (Rear) #of Baseline Engine Make:
Engine Type: Main (Front) -OR- Aux Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	kiliary (Rear) #of Baseline Engine Make:
Engine Type: Main (Front) -OR- Aux Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	kiliary (Rear) #of Baseline Engine Make:
Engine Type: Main (Front) -OR- Aux Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	kiliary (Rear) #of Baseline Engine Make:



Part 3: New Engine Information (one section for each engine)

Engine Type: Alin (Front) -OR- Aux	tiliary (Rear) # <u>of</u>
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: Main (Front) -OR- Aux	tiliary (Rear) #
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity	(hr/yr) unless the fuel tank is dedicated for the use of this single unit.
Engine Type: Main (Front) -OR- Aux	iliary (Rear) # of
Fuel Type:	Baseline Engine Make:
Fuel Type: Baseline Engine Model:	Baseline Engine Make: Baseline Engine Year:
Fuel Type:	Baseline Engine Make:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit.
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit. tiliary (Rear) #of
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit. illiary (Rear) #of Baseline Engine Make:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit. iliary (Rear) #of Baseline Engine Make: Baseline Engine Year:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit. iliary (Rear) #of Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr) unless the fuel tank is dedicated for the use of this single unit. iliary (Rear) #of Baseline Engine Make: Baseline Engine Year:



Part 4: New Engine Vendor Information

Name and location of dealership assisting with this equipment:

Equipment Vendor Contact:

Equipment Vendor Phone:

Part 5: Retrofit Information (applicable to Repower projects)

You <u>MUST</u> attach a copy of the CARB Executive Order for the retrofit device and indicate (circle) on the Executive Order Attachment the engine family name for the engine on which the device will be installed. Download the EO at: <u>http://www.arb.ca.gov/diesel/cv.htm</u>

NOTE: Off-road retrofits must include installation of the highest level CARB-verified retrofit device.

On which repowered engine will this device be installed? Auxiliary (Rear) # of Auxiliary (Rear) # of	
Retrofit Device CARB Executive Order Number:	
Retrofit Device Make:	Verified NOx Reduction: %
Retrofit Device Model:	Verified PM Reduction: %
Retrofit Family Name:	Verified ROG Reduction: %
Verification Level:	Retrofit Device Serial No.
On which repowered engine will this device be insta	lled? Main (Front) # <u>of</u> Auxiliary (Rear) # <u>of</u>
Retrofit Device CARB Executive Order Number:	
Retrofit Device Make:	Verified NOx Reduction: %
Retrofit Device Model:	Verified PM Reduction: %
Retrofit Family Name:	Verified ROG Reduction: %
Verification Level:	Retrofit Device Serial No.



Part 6a: Funding/Cost Information for Engine Repower

You <u>MUST</u> attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.

Engine Type? Main (Front) Engine(s):Auxiliary (Rear) Engine(s):
New Engine Unit Cost: \$
Tax: \$
Installation Cost: \$
Total Repower Cost: \$
Applicant Co-Funding Amount (if any): \$
Grant Request Amount for this Repower: \$
Engine Type? Main (Front) Engine(s):Auxiliary (Rear) Engine(s):
New Engine Unit Cost: \$ (Quantity of this Engine Type:)
Tax: \$
Installation Cost: \$
Total Repower Cost: \$
Applicant Co-Funding Amount (if any): \$
Grant Request Amount for Repower: \$



Part 6b: Funding/Cost Information for Engine Retrofits

You <u>MUST</u> attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement. The data-logging cost of a retrofit project cannot be included in the eligible project cost.

On which repowered engine will this of	
	Auxiliary (Rear) # of
Retrofit Device Unit Cost: \$	
Tax: \$	
Installation Cost: \$	
Maintenance Cost: \$	(if grant funding assistance is requested)
Total Retrofit Cost: \$	
Retrofit Device Vendor and Installer:	
Grant Request for Retrofit: \$	
On which repowered engine will this of	device be installed? Main (Front) # <u>of</u> Auxiliary (Rear) # <u>of</u>
On which repowered engine will this of Retrofit Device Unit Cost: \$	
Retrofit Device Unit Cost: \$	
Retrofit Device Unit Cost: \$ Tax: \$	
Retrofit Device Unit Cost: \$ Tax: \$ Installation Cost: \$	Auxiliary (Rear) #
Retrofit Device Unit Cost: \$ Tax: \$ Installation Cost: \$ Maintenance Cost: \$	Auxiliary (Rear) #

Part 6c: Total Project Costs and Grant Request for full Project

Total Project Cost (Repower(s) + Retrofit(s)): Total Grant Request (Repower(s) + Retrofit(s)):



FORM C-3: OFF-ROAD EQUIPMENT RETROFIT

If you have any questions regarding this program or the application process, please contact **Richard Carlson** by phone at (909) 396-3996 or by email at: <u>rcarlson@aqmd.gov</u>.

Please complete one Form C-3 for each piece of equipment. For multiple unit requests, you may download the Form C-3 multiple-unit spreadsheet from <u>www.aqmd.gov/Moyer</u> in lieu of filling out multiple C-3 forms.

Part 1: Equipment Information

Company name/ Organization name/ Individual name:
Is equipment currently subject to CARB's Off-Road Regulation? Yes No Off-road equipment applicants subject to CARB's In-Use Off-Road Diesel Vehicle Regulation must submit their DOORS fleet compliance snapshot and vehicle list. You may contact the DOORS hotline at (877) 593-6677 for assistance.
Baseline Equipment Identifier (Company ID or Unit #):
What is the primary function of this equipment?
Has this equipment received Carl Moyer Program funds in the past?
Is the vehicle location address the same as the applicant address? Yes No If "No", provide vehicle address here:
Is existing equipment in operable condition?
How long has applicant owned the existing piece of equipment?
Equipment Type (e.g. tractor, scraper, roller, loader, etc.):
Number of Main Engines on this Unit?
Number of Auxiliary Engines on this Unit?
Equipment Serial Number or VIN:
Baseline Equipment Make & Model: Make: Model:
Equipment Model Year:
Is this vehicle used in Agricultural operation? Yes No
If Yes, What percent of the time of the equipment used in Agricultural operations?%
Does the existing equipment have a functioning, non- resettable hour meter?
Proposed Project Life (same as contract term/how long you must operate equipment): years



Part 2: Existing Engine Information (one section for each engine)

Method proposed for rendering the baseline engin	e(s) inoperable:
Engine Type: Main (Front) -OR- Aux	iliary (Rear) # <u>of</u>
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity to	(hr/yr) unless the fuel tank is dedicated for the use of this single unit.
Engine Type: Main (Front) -OR- Aux	iliary (Rear) # <u>of</u>
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year:	(hr/yr) (hr/yr) (hr/yr) (hr/yr) (hr/yr) (hr/yr)
Engine Type: Main (Front) -OR- Aux	iliary (Rear) #
Engine Type: Aux Fuel Type:	
	iliary (Rear) # <u>of</u>
Fuel Type:	iliary (Rear) # Baseline Engine Make:
Fuel Type: Baseline Engine Model:	iliary (Rear) # <u>of</u> Baseline Engine Make: Baseline Engine Year:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	iliary (Rear) # Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity to	iliary (Rear) # Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: (hr/yr)
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity to	iliary (Rear) #of Baseline Engine Make:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year: Note: Annual gallons may not be used to document activity to Engine Type: Main (Front) -OR- Aux	iliary (Rear) #of Baseline Engine Make:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	iliary (Rear) #of Baseline Engine Make:
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: Annual activity in units of hour per year:	iliary (Rear) #of Baseline Engine Make:



Part 3: Retrofit Information

You <u>MUST</u> attach a copy of the CARB Executive Order for the retrofit device and indicate (circle) on the Executive Order Attachment the engine family name for the engine on which the device will be installed. Download the EO at: <u>http://www.arb.ca.gov/diesel/cv.htm</u>

NOTE: Off-road retrofits must include installation of the highest level CARB-verified retrofit device.

Engine Type: Main (Front) -OR- Auxi	liary (Rear)		#	of
Retrofit Device Make:	Verified NOx Reduction:	%		
Retrofit Device Model:	Verified PM Reduction:	%		
Retrofit Family Name:	Verified ROG Reduction:	%		
Verification Level:	Retrofit Device Serial No.			
Engine Type: Main (Front) -OR- Auxiliary (Rear)			#	of
Retrofit Device Make:	Verified NOx Reduction:	%		
Retrofit Device Model:	Verified PM Reduction:	%		
Retrofit Family Name:	Verified ROG Reduction:	%		
Verification Level:	Retrofit Device Serial No.			
Engine Type: Main (Front) -OR- Auxi	liary (Rear)		#	of
Engine Type: Main (Front) -OR- Auxi Retrofit Device Make:	liary (Rear) Verified NOx Reduction:	%	#	of
		%	#	of
Retrofit Device Make:	Verified NOx Reduction:		#	of
Retrofit Device Make: Retrofit Device Model:	Verified NOx Reduction: Verified PM Reduction:	%	#	of
Retrofit Device Make: Retrofit Device Model: Retrofit Family Name: Verification Level:	Verified NOx Reduction: Verified PM Reduction: Verified ROG Reduction:	%	#	of of
Retrofit Device Make: Retrofit Device Model: Retrofit Family Name: Verification Level:	Verified NOx Reduction: Verified PM Reduction: Verified ROG Reduction: Retrofit Device Serial No.	%		
Retrofit Device Make: Retrofit Device Model: Retrofit Family Name: Verification Level: Engine Type: Main (Front) -OR- Auxi	Verified NOx Reduction: Verified PM Reduction: Verified ROG Reduction: Retrofit Device Serial No.	%		
Retrofit Device Make: Retrofit Device Model: Retrofit Family Name: Verification Level: Engine Type: Main (Front) -OR- Auxi Retrofit Device Make:	Verified NOx Reduction: Verified PM Reduction: Verified ROG Reduction: Retrofit Device Serial No. liary (Rear) Verified NOx Reduction:	% %		



Part 4: Funding/Cost Information for Engine Retrofit(s)

You <u>MUST</u> attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement. The data-logging cost of a retrofit project cannot be included in the eligible project cost.

On which repowered engine will this c	levice be installed? Main (Front) # <u>of</u> Auxiliary (Rear) # <u>of</u>
Retrofit Device Unit Cost: \$	
Tax: \$	
Installation Cost: \$	
Maintenance Cost: \$	(if grant funding assistance is requested)
Total Retrofit Cost: \$	
Retrofit Device Vendor and Installer:	
Grant Request for Retrofit: \$	

On which repowered engine will this o	levice be installed? Main (Front) # <u>of</u> Auxiliary (Rear) # <u>of</u>
Retrofit Device Unit Cost: \$	
Tax: \$	
Installation Cost: \$	
Maintenance Cost: \$	(if grant funding assistance is requested)
Total Retrofit Cost: \$	
Retrofit Device Vendor and Installer:	
Grant Request for Retrofit: \$	



FORM C-4: CARGO HANDLING EQUIPMENT ELECTRIFICATION

If you have any questions regarding this program or the application process, please contact **Greg Ushijima** by phone at (**909**) **396-3301** or by email at: **<u>gushijima@aqmd.gov</u>**.

Please complete one Form C-4 for each piece of equipment. For multiple unit requests, you may download the Form C-4 multiple-unit spreadsheet from <u>www.aqmd.gov/Moyer</u> in lieu of filling out multiple C-4 forms.

Please Check One:

Rubber-Tire Gantry Crane Electrification
 Other Cargo Handling Equipment (CHE) Electrification

Part 1: Existing Equipment Information

Company name/ Organization name/ Individual name:
Is equipment currently subject to CARB's Cargo Handling Equipment regulation? Yes No
If YES, attach evidence that your fleet is in full compliance of this regulation.
If NO, and the applicant is not able to document that project equipment is not subject to the CARB regulation, then the project is ineligible.
Baseline Equipment Identifier (Company ID or Unit #):
What is the primary function of this equipment?
Has this equipment received Carl Moyer Program funds in the past?
Is the vehicle location address the same as the applicant address? Yes No If "No", please provide vehicle address here:
Is existing equipment in operable condition?
How long has applicant owned the existing piece of equipment?
Baseline Equipment Type (e.g. yard trucks, top handlers, side handlers, reach stackers, forklifts, loaders, aerial lifts, excavators, dozers, etc.):
Number of Main Engines on this Unit?
Number of Auxiliary Engines on this Unit?
Baseline Equipment Serial Number:
Baseline Equipment Make & Model: Make: Model:
Baseline Equipment Model Year:
Does the existing equipment have a functioning, non- resettable hour meter?
Proposed Project Life (same as contract term/how long you must operate equipment): years



South Coast Air Quality Management District Cargo Handling Equipment (CHE) Electrification Application Form C – 4

Part 2a: Existing (baseline) Engine Information (one section for each engine)

Method proposed for rendering the baseline en	gine(s) inoperable:		
Engine Type: Main (Front) -OR-	Auxiliary (Rear)	#	of
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
Engine Type: Main (Front) -OR-	Auxiliary (Rear)	#	of
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
Engine Type: Main (Front) -OR-	Auxiliary (Rear)	#	of
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
Engine Type: Main (Front) -OR-	Auxiliary (Rear)	#	of
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		

Part 2b: Existing (baseline) Engine Activity Information

Annual Operation Hours (hours/year):
Annual Fuel Usage (gallons per year):
Fuel Type:



South Coast Air Quality Management District Cargo Handling Equipment (CHE) Electrification Application Form C – 4

Part 3: Project Description

Please provide a full description of the proposed project. Include specifications for the equipment electrification and associated infrastructure.

(Attach additional sheets if more space is needed.)

Part 4: Electrification Vendor Information

Equipment Vendor/Contractor Company:

Equipment Vendor/Contractor Contact Name:

Equipment Vendor/Contractor Phone Number:

Equipment Vendor/Contractor Email:

Part 5: Projected New Equipment Activity Information

Estimated Future Annual Operation Hours (hours/year):

Annual Fuel Usage (gallons per year):

Fuel Type:



South Coast Air Quality Management District Cargo Handling Equipment (CHE) Electrification Application Form C – 4

Part 6: Funding/Cost Information for this Electrification Project

You <u>MUST</u> attach a written estimate from the equipment vendor/contractor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement. Quote must itemize material costs and labor costs separately and must provide explanatory details on each line item.

Total Project Materials Cost (incl. tax): \$

Total Project Labor Cost: \$

Total Project Cost: \$

Applicant Co-Funding Amount (if any): \$

Applicant Grant Request Amount: \$



South Coast Air Quality Management District Marine Vessels, Repower Application Form D - 1

FORM D-1: MARINE VESSELS - REPOWER

If you have any questions regarding this program or the application process, please contact:

- Mark Coleman at (909) 396-3074 or mcoleman@aqmd.gov
- Von Loveland at (909) 396-3063 or <u>vloveland@aqmd.gov</u>

Please complete one form for each marine vessel.

Part 1: Existing Equipment Information

Company name/ Organization name:
All Commercial Harbor Craft are currently subject to CARB's Commercial Harbor Craft regulation.
Attach a copy of your most recent CARB Commercial Harbor Craft Initial Report, and all updates.
Vessel Name:
Has this equipment received Carl Moyer Program funds in the past?
Port/Harbor:
Terminal: Pier:
Vessel berth / slip number:
Primary Vessel Use: (Commercial Fishing, Charter Fishing, Crew & Supply, Pilot, Work, Ferry/ Excursion, Tow, Tug, Barge, Other):
Annual Hours of operation for Primary Vessel Use:hr/yr
Secondary Vessel Use (If Applicable):
Annual Hours of operation for Secondary Vessel Use:hr/yr
Vessel Make:
Vessel Model:
Vessel Model Year:
U.S. Coast Guard Documentation Number (IMO Lloyd's Number if oceangoing vessel, or CF# AND CA Department of Fish & Game license for fishing vessels manufactured out of the United States or less than five net tons displacement):
Does the project vessel utilize a wet exhaust system: Yes No
Total Number of Main Engines on this Vessel?
Total Number of Auxiliary Engines on this Vessel?



Part 2. Usage/Activity Information

Provide projected annual usage for the vessel/engines over the proposed life of the project. This projection should be based on actual usage for the marine vessel. You <u>MUST</u> attach documentation supporting the projected annual usage and operation within District and California waters. Supporting hours of operation documentation may be in the form of maintenance records, hour-meter reports, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months.

The vessel is required to have a functioning non-resettable hour meter for the full project life.

Initial here to indicate understanding of this requirement:

Project Life ______ years. Project Life is equivalent to the contract reporting term. (Project life may be adjusted by SCAQMD)

Number of Propulsion Engines to be repowered:

Number of Auxiliary Engines to be repowered:

For each Propulsion engine: Hours of Operation (per year, per engine):_____

For each Auxiliary engine: Hours of Operation (per year, per engine):_____

Percent of Operation within California waters:_____%

Percent of Operation within District waters: _____%

Justification for purchasing new transmission (if applicable):

Electronic Monitoring Unit

I understand that a new Electronic Monitoring Unity (EMU) will be installed as part of this Project. (This is a program requirement.) Initial:_____

□Yes



South Coast Air Quality Management District Marine Vessels, Repower Application Form D-1

Part 3. Engine Information

Main Engine of	Auxiliary Engine of
Baseline (Existing) Engine Information	
Fuel Type:	Engine Make:
Engine Model:	Engine Year:
Engine Serial No.:	Horsepower:
Engine Displacement: Liters (ltr):	Engine Family:
Cylinder (cyl):	
Method proposed for rendering the replaced eng	ine inoperable:
New Reduced-Emission Engine Information	
Fuel Type:	Engine Make:
Engine Model:	Engine Year:
Engine Serial No.:	Horsepower:
Engine Displacement: ltr: cyl:	Engine Family:
New Engine Cost (incl. tax): \$	New Eng. Installation/Labor Cost: \$
└JMain Engine of	Auxiliary Engine of
Lagine Engine of Baseline (Existing) Engine Information	Auxiliary Engine of
	LAuxiliary Engine of Engine Make:
Baseline (Existing) Engine Information	
Baseline (Existing) Engine Information Fuel Type:	Engine Make:
Baseline (Existing) Engine Information Fuel Type: Engine Model:	Engine Make: Engine Year:
Baseline (Existing) Engine InformationFuel Type:Engine Model:Engine Serial No.:	Engine Make: Engine Year: Horsepower: Engine Family:
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement:	Engine Make: Engine Year: Horsepower: Engine Family:
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement: Itr: Method proposed for rendering the replaced engine	Engine Make: Engine Year: Horsepower: Engine Family:
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement: Itr: Method proposed for rendering the replaced eng New Reduced-Emission Engine Information	Engine Make: Engine Year: Horsepower: Engine Family: ine inoperable:
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement: Itr: Method proposed for rendering the replaced eng New Reduced-Emission Engine Information Fuel Type:	Engine Make: Engine Year: Horsepower: Engine Family: ine inoperable: Engine Make:
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement: Itr: Method proposed for rendering the replaced eng New Reduced-Emission Engine Information Fuel Type: Engine Model:	Engine Make: Engine Year: Horsepower: Engine Family: ine inoperable: Engine Make: Engine Year:



South Coast Air Quality Management District Marine Vessels, Repower Application Form D-1

Part 3. Engine Information, cont'd.

☐ Main Engine of	Auxiliary Engine of
Baseline (Existing) Engine Information	
Fuel Type:	Engine Make:
Engine Model:	Engine Year:
Engine Serial No.:	Horsepower:
Engine Displacement: Liters (ltr):	Engine Family:
Cylinder (cyl):	
Method proposed for rendering the replaced eng	ine inoperable:
New Reduced-Emission Engine Information	
Fuel Type:	Engine Make:
Engine Model:	Engine Year:
Engine Serial No.:	Horsepower:
Engine Displacement: ltr: cyl:	Engine Family:
New Engine Cost (incl. tax): \$	New Eng. Installation/Labor Cost: \$
☐ Main Engine of	Auxiliary Engine of
Baseline (Existing) Engine Information	
Fuel Type:	Engine Make:
Engine Model:	Engine Year:
Engine Serial No.:	Horsepower:
Engine Displacement: ltr: cyl:	Engine Family:
Method proposed for rendering the replaced eng	ine inoperable:
New Reduced-Emission Engine Information	
Fuel Type:	Engine Make:
Engine Model:	Engine Year:
Engine Serial No.:	Horsepower:
Engine Displacement: ltr: cyl:	Engine Family:
New Engine Cost (incl. tax): \$	New Eng. Installation/Labor Cost:\$



South Coast Air Quality Management District Marine Vessels, Repower Application Form D-1

Part 3. Engine Information, cont'd.

□ Main Engine of	Auxiliary Engine of	
Baseline (Existing) Engine Information		
Fuel Type:	Engine Make:	
Engine Model:	Engine Year:	
Engine Serial No.:	Horsepower:	
Engine Displacement: ltr: cyl:	Engine Family:	
Method proposed for rendering the replaced eng	ine inoperable:	
New Reduced-Emission Engine Information		
Fuel Type:	Engine Make:	
Engine Model:	Engine Year:	
Engine Serial No.:	Horsepower:	
Engine Displacement: ltr: cyl:	Engine Family:	
New Engine Cost (incl. tax): \$	New Eng. Installation/Labor Cost:\$	
☐ Main Engine of	Auxiliary Engine of	
Main Engine of Baseline (Existing) Engine Information	Auxiliary Engine of	
	Auxiliary Engine of Engine Make:	
Baseline (Existing) Engine Information		
Baseline (Existing) Engine Information Fuel Type:	Engine Make:	
Baseline (Existing) Engine Information Fuel Type: Engine Model:	Engine Make: Engine Year:	
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.:	Engine Make: Engine Year: Horsepower: Engine Family:	
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement:	Engine Make: Engine Year: Horsepower: Engine Family:	
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement: Itr: Method proposed for rendering the replaced eng	Engine Make: Engine Year: Horsepower: Engine Family:	
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement: Itr: Method proposed for rendering the replaced eng New Reduced-Emission Engine Information	Engine Make: Engine Year: Horsepower: Engine Family: ine inoperable:	
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement: Itr: Method proposed for rendering the replaced eng New Reduced-Emission Engine Information Fuel Type:	Engine Make: Engine Year: Horsepower: Engine Family: ine inoperable: Engine Make:	
Baseline (Existing) Engine Information Fuel Type: Engine Model: Engine Serial No.: Engine Displacement: Itr: Method proposed for rendering the replaced eng New Reduced-Emission Engine Information Fuel Type: Engine Model:	Engine Make: Engine Year: Horsepower: Engine Family: ine inoperable: Engine Make: Engine Year:	



Part 4. Funding Information

Total Project Cost of All New Engines (incl. tax and labor): \$

NOTE: You <u>MUST</u> attach a written estimate or quotation from the equipment vendor documenting the cost of the new equipment. This quote must be obtained within 90 days prior to the closing date of the Program Announcement. The quote must indicate the certification level of the new, replacement engine (i.e., Tier 3 or cleaner).

Applicant Co-Funding Amount (if any): \$

Total Funding Requested (all engines): \$

New Engine Vendor/Installer Contact Information:



FORM D-2: MARINE VESSELS – SHORE POWER

If you have any questions regarding this program or the application process, please contact **Greg Ushijima** by phone at (**909**) **396-3301** or by email at: **<u>gushijima@aqmd.gov</u>**.

Please complete one form for each Shore Power project.

Part 1. Project Information

Company name/ Organization name/ Individual name:		
Type of project (check all that apply): Vessel retrofit to accept electrical power ("ship-side") Purchase of transformer and associated infrastructure ("shore-side")		
Type of applicant: Terminal Operator Vessel Owner Port Authority Other		
Other potential project partners (if applicable):		
Power supplier:		
Where does the electrical power infrastructure begin and end?		
Project Location: (Please include port, terminal, pier and berthing slip) If you are leasing the terminal, identify time left on the current lease:		
Total number of vessels expected to use shore power at this location (per year):		
Total number of annual vessel visits expected to use shore power:		
Total number of annual hours of usage for vessels expecting to use shore power:		



Part 2: Vessel Information

Complete Part 2 for each vessel to be retrofitted. For transformer only projects please provide a detailed description of the vessels that typically use this terminal.

If your vessel type is a refrigerated cargo ship, container-ship or passenger ship, please attach your Vessel Plan as required by the ARB shore power regulation: http://www.arb.ca.gov/ports/shorepower/shorepower.htm

Vessel Type:		
Vessel Name:	Vessel Make:	
Vessel Model:	Vessel Year:	
US Coast Guard Documentation Number:		
Lloyds Register/IMO Ship ID Number:		
Vehicle Registration (CF) Number:		
Total Number of main and auxiliary engines on vessel: Main engine(s)Auxiliary engine(s)		
Total number of annual visits to the terminal:		
Average berthing time (hours) of the vessel, per visit (include time needed to connect and disconnect the vessel to shore power):		
Vessel power (kW) requirements while at berth: Average Power Requirement: Maximum Power Requirement:		

Part 3. Current Berth Activity (Cumulative)

Number of annual ship visits to the berth (attach the log of vessel visits for each of the specified years):	
2012	
2013	
2014	



Part 4. Predicted (Future)Berth Activity

Estimated annual ship visits using electrical power: 2014-2016______ 2017-2019______ 2020 and beyond______

Estimated monthly hours of operation: 2014-2016_____ 2017-2019_____

2020 and beyond_____

Estimated monthly megawatt (MW) usage:

2014-2016_____

2017-2019_____

2020 and beyond_____

Part 5: Vessel Activity Information

Attach a detailed description of the vessels that will be using the shore power equipment. Title this attachment "Part 5 – Vessel Activity Information". This description should include:

- Vessel type
- Ship size (in 20-foot equivalent units (TEU) capacity)
- Number and type of engines
- Power demand (total auxiliary power (kW) not hotelling load)
- This number of auxiliary engines typically operating while at berth per vessel
- Number of annual visits
- Average berthing time (hours) of the vessel, per visit (include time needed to connect and disconnect the vessel to shore power). Be sure to consider the maximum time the auxiliary engines are in use.



Part 6: Funding Information

You <u>MUST</u> attach a written estimate or quotation from the equipment vendor documenting the cost of the new equipment and associated labor. This quote must be obtained within 90 days prior to the closing date of the Program Announcement.

Fransformer Project Cost: \$		Associated Infrastructure: \$	
Retrofit Equip. Cost (incl. tax): \$		Retrofit Equip. Installation Cost: \$	
Total Project Cost:	Total Project Cost:		
Total Amount Requested for this Project: You <u>MUST</u> attach a detailed written estimate/quote from the equipment vendor for the cost of the equipment and labor.			
Maximum allowable Shore Power Transformer ("shore-side"): 50% of transformer & other equipment between the vessel and transformer			
Shore Power Vessel Retrofit ("ship-side"): 100% of retrofit cost & 50% of transformer cost			
Other: \$ You may request less than the maximum allowable funding amount to improve cost-effectiveness of your project.			
Anticipated Project Completion Date: Please attach a proposed project schedule. Title this attachment "Part 8 – Project Schedule."			



South Coast Air Quality Management District Locomotives Application Form E – 1

FORM E-1: LOCOMOTIVES

If you have any questions regarding this program or the application process, please contact **Connie Day** by phone at **(909) 396-3055** or by email at: <u>cday@aqmd.gov</u>.

Please complete one Form E-1 for each piece of equipment. For multiple unit requests, you may download the Form E-1 multiple-unit spreadsheet from <u>www.aqmd.gov/Moyer</u> in lieu of filling out multiple E-1 forms.

Which type of locomotive project is proposed with this application? (Check one)

- Locomotive Replacement (includes Tier 4 locomotives (or cleaner), GenSet locomotives (multi-engine switcher) and electric-hybrid locomotives. U.S.EPA considers a refurbished locomotive a new locomotive if it includes at least 75 % (by value) new parts.
- □ Idle limiting device (ILD)
- U.S. EPA certified engine remanufacture kit or repower/refurbishment
- □ ARB verified retrofit
- \Box Head end power unit (HEP)

Part 1: Locomotive Information

Locomotive Type (Line Haul, Traditional Switche	r, Alternative Technology Switcher, Passenger):
Railroad Class:	
Proposed Project Life (same as contract term/how	long you must operate equipment):years
Percent Operation in California (%):	Percent Operation in District (%):
Has this equipment received previous CMP Funding	ng? 🗌 Yes 🗌 No
Unit Number or Other Identifier:	Equipment Location Address:
Locomotive Make:	Locomotive Serial Number:
Locomotive Model:	Locomotive Model Year:
Does the locomotive already have a functioning idle limit device (ILD) installed?	



Part 2: Existing (Baseline) Engine(s) Information

Engine Type: MAIN -OR- A	UXILIARY	#	of
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
US EPA Certificate of Conformity No: (attached)	CARB Executive Order No: (attached)		
Engine Type: MAIN -OR- A	UXILIARY	#	of
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
US EPA Certificate of Conformity No:	CARB Executive Order No:		
(attached)	(attached)		
	(attached) AUXILIARY	#	of
	· · ·	#	of
Engine Type: MAIN -OR- A	UXILIARY	#	of
Engine Type: MAIN -OR- A Fuel Type:	AUXILIARY Baseline Engine Make:	#	of
Engine Type: MAIN -OR- A Fuel Type: Baseline Engine Model:	AUXILIARY Baseline Engine Make: Baseline Engine Year:	#	of
Engine Type: MAIN -OR- A Fuel Type: Baseline Engine Model: Engine Serial No.:	MUXILIARY Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower:	#	of
Engine Type: MAIN -OR- A Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached)	AUXILIARY Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No:	#	of
Engine Type: MAIN -OR- A Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached)	AUXILIARY Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached)		
Engine Type: MAIN -OR- A Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) Engine Type: MAIN -OR- A	AUXILIARY Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached)		
Engine Type: MAIN -OR- A Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) Engine Type: MAIN -OR- A Fuel Type: MAIN -OR- A	AUXILIARY Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached) AUXILIARY Baseline Engine Make:		
Engine Type: MAIN -OR- A Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) Engine Type: MAIN -OR- A Fuel Type: Baseline Engine Model: A	AUXILIARY Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached) AUXILIARY Baseline Engine Make: Baseline Engine Year:		



South Coast Air Quality Management District Locomotives Application Form E – 1

Part 3: Existing Locomotive Activity Information

Annual Fuel Usage (gallons per year):

2012: _____ 2013: _____ 2014: _____

Attach documentation to support the reported gallons per year.

Complete each section(s) below that pertains to your Locomotive project type:

Part 4: New (Replacement) Locomotive Information

Locomotive Type:

 \Box Tier 4 locomotive (or cleaner)

□ GenSet locomotive (multi-engine switcher)

□ Electric-hybrid locomotive

NOTE: A refurbished locomotive is considered to be a new locomotive if it includes at least 75 percent (by value) new parts.

Locomotive Serial Number (If available):	
Locomotive Make:	
Locomotive Model:	
Locomotive Model Year:	
Will the locomotive have a functioning idle limit device (ILD) installed?	Yes No



Part 5: New/Replacement Engine(s) Information

Engine Type: MAIN -OR- AL	VXILIARY	#	of
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
US EPA Certificate of Conformity No: (attached)	CARB Executive Order No: (attached)		
US EPA Certified Emissions (g/bhp-hr): NO	x: HC: PM:		
Engine Type: MAIN -OR- AU	VXILIARY	#	of
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
US EPA Certificate of Conformity No: (attached)	CARB Executive Order No: (attached)		
US EPA Certified Emissions (g/bhp-hr): NO	x: HC: PM:		
Engine Type: MAIN -OR- AU	XILIARY	#	of
Engine Type: MAIN -OR- AU Fuel Type:	XILIARY Baseline Engine Make:	# <u></u>	of
		#	<u>of</u>
Fuel Type:	Baseline Engine Make:	#	_of
Fuel Type: Baseline Engine Model:	Baseline Engine Make: Baseline Engine Year:	#	<u>of</u>
Fuel Type: Baseline Engine Model: Engine Serial No.:	Baseline Engine Make:Baseline Engine Year:Baseline Engine Horsepower:	#	<u>of</u>
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached)	Baseline Engine Make:Baseline Engine Year:Baseline Engine Horsepower:Baseline Engine Family:CARB Executive Order No:	#	<u>of</u>
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) US EPA Certified Emissions (g/bhp-hr):	Baseline Engine Make:Baseline Engine Year:Baseline Engine Horsepower:Baseline Engine Family:CARB Executive Order No:(attached)	#	of
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) US EPA Certified Emissions (g/bhp-hr):	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached) x: HC: PM:	#	
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) US EPA Certified Emissions (g/bhp-hr): NO Engine Type: MAIN -OR- AU	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached) x: HC: PM: VXILIARY	#	
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) US EPA Certified Emissions (g/bhp-hr): NO Engine Type: MAIN Fuel Type:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached) x: HC: YXILIARY Baseline Engine Make:	#	
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) US EPA Certified Emissions (g/bhp-hr): NO Engine Type: MAIN Fuel Type: Baseline Engine Model:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached) x: HC: YXILIARY Baseline Engine Make: Baseline Engine Year:	#	
Fuel Type: Baseline Engine Model: Engine Serial No.: Baseline Engine Tier: US EPA Certificate of Conformity No: (attached) US EPA Certified Emissions (g/bhp-hr): NO Engine Type: MAIN Fuel Type: Baseline Engine Model: Engine Serial No.:	Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower: Baseline Engine Family: CARB Executive Order No: (attached) X: HC: VXILIARY Baseline Engine Make: Baseline Engine Year: Baseline Engine Horsepower:	#	



Part 6: Future/Projected Locomotive Activity Information

Annual Fuel Usage (gallons per year): _____

Contact the SCAQMD Staff Lead to discuss your project and appropriate assumptions for this projection.

Part 7: Engine and/or Locomotive Cost

All cost estimates must be based on quotes that have been obtained within 90 days prior to the closing date of the Program Application. Attach all quotes to the application.

New Locomotive Cost: \$	
Engine Unit Cost: \$	
Tax: \$	
Engine Installation Cost: \$	
Total Project Cost: \$	
Project Grant Request: \$	

Part 8: Additional Project Information

Please provide a full description of the proposed project. Include an explanation of any project elements that are not adequately covered in the above Parts.

(Attach additional sheets if more space is needed.)



Surplus Off-Road Opt-In for NOx (SOON)

SCAQMD PROGRAM ANNOUNCEMENT #PA2016-06

The South Coast Air Quality Management District (SCAQMD) is soliciting project proposals for the following purpose according to terms and conditions attached. In this Program Announcement (PA) the words "Proposer," "Applicant," "Contractor," and "Consultant" are used interchangeably.

SECTION I - OVERVIEW

PURPOSE

The SCAQMD is seeking proposals for the Surplus Off-Road Opt-In for NOx (SOON) Provision of the California Air Resources Board's (CARB's) In-Use Off-Road Diesel Vehicle Regulation. The primary purpose of this program is to provide financial incentives to assist in the purchase of low-emission heavy-duty engine technologies to achieve nearterm nitrogen oxides (NOx) emission reductions from in-use off-road equipment. Since funding for the SOON Program is from the Carl Moyer Program (CMP), all CMP requirements apply to this Program, except where specifically noted, or where the SCAQMD implements more stringent program criteria as described in the Rule 2449 SOON Implementation Guidelines.

INTRODUCTION

The SOON Program is designed to achieve additional NOx reductions above those that would be obtained from the State In-Use Off-Road Vehicle Regulation. These reductions are critical to meeting the PM2.5 and ozone ambient air quality standards in the South Coast Air Basin.

Funding for Program Announcement #PA2016-06 is from state SB 1107 and AB 923 funds. Project awards are contingent upon receiving these funds from CARB. Additional sources of funding may become available and added to this Program.

Desirable projects must strive to meet a maximum cost-effectiveness limit of \$18,260 per ton of emissions reduced and any additional SCAQMD criteria as stated in this PA (the cost-effectiveness limit may be changed depending on the demand for program funds). Projects exceeding the cost-effectiveness limit may receive partial funding. Except where otherwise stated, projects must meet the requirements of the CMP program guidelines.

The current Program Announcement was prepared using the Approved Revision of the CMP Guidelines released on December 18, 2015. It is the applicant's responsibility to ensure that the most current information and requirements are reflected in a submitted application. Applicants should check the CARB website for updates and advisories to the guidelines (<u>http://www.arb.ca.gov/msprog/moyer/moyer.htm</u>).

SCAQMD SOON requirements may sometimes be more stringent than CARB guidelines. For example, SCAQMD may have a lower cost-effectiveness ceiling for a particular category. In case there are any conflicts between CARB guidelines and SCAQMD criteria, <u>the more stringent</u> criteria will prevail. SCAQMD will post any new information and requirements on its SOON web page at <u>www.aqmd.gov/soon</u>. It is the responsibility of the applicant to ensure that the most current information and requirements are reflected in a submitted application.

DEFINITIONS

1. Alternative Fuel

Alternative fuels include compressed natural gas (CNG), liquefied natural gas (LNG), methanol, ethanol, propane (LPG) and electric technologies.

2. Base Rule

Base rule is defined as CARB's In-Use Off-Road Diesel regulation without the SOON provisions. Compliance with the Base Rule is required and is demonstrated by the DOORS Compliance Snapshot.

3. Compliance Plan

Compliance plan is the future forecast of fleet average emissions using current fleet information and planned future repower, replacement, retirement and retrofit projects. An Excel spreadsheet template is available on the SCAQMD SOON Web page.

4. Contract Term

Contract term is the duration for which the contract is valid. It encompasses both the project completion and project implementation periods.

- i. Project completion period is the first part of the Contract term starting from the date of Contract execution by both parties to the date the project post-inspection confirms that the project has become operational.
- ii. Project implementation period is the second part of the Contract term and equals the project life.
- 5. Cost-Effectiveness Limit

The cost-effectiveness limit is the maximum funding that can be provided to an individual vehicle repower, replacement or retrofit project for each ton of covered emission reduced.

6. Current NOx Standard

For all engine horsepower categories, the current NOx standard in 2015 is Tier 4 Final.

7. Dual-Fuel Technology

Dual-fuel technology includes electric hybrids and technologies that utilize a combination of either CNG and diesel fuel or LNG and diesel fuel, provided they are certified by CARB. Experimental technologies and fuels will be referred to CARB for evaluation and possible eligibility in the program.

8. Incremental Cost

Incremental cost is the percent of actual cost that is eligible for SOON funding. For

repower projects, it is 85%; for replacement projects, it is 80%; and for retrofit projects, it is 100%.

9. Project Life

Project life is the period of the contract term during which the repowered, replacement or retrofitted vehicle is operated and the contractor must report annual usage. It is used to calculate the cost-effectiveness and funding amount for a particular project.

10. Replacement Project

Replacement project is the purchase of a new or used vehicle to replace an existing vehicle.

11. Repower Project

Repower project is the replacement of an old engine of an existing vehicle with a newer engine certified to lower emission standards.

12. Retrofit Project

Retrofit project is a modification made to an engine exhaust and/or fuel system such that the specifications of the retrofitted engine are different from the original engine.

GENERAL PROGRAM INFORMATION

The primary focus of the SOON Program is to achieve emission reductions from heavyduty vehicles and equipment operating in California as early and as cost effectively as possible. The SOON Program is intended to achieve additional NOx reductions which are needed to meet the PM2.5 and ozone ambient air quality standards in the South Coast Air Basin. The emission reductions expected through the deployment of low-emission engines or retrofit technologies under this Program must be real, surplus and quantifiable. To avoid double counting of emission reductions, project vehicles and/or equipment may not receive funding from any other government grant program that is designed to reduce mobile source emissions. Specifically, these programs include, but are not limited to:

- All Mobile Source Air Pollution Reduction Review Committee (MSRC) Programs
- All CARB Emission Reduction Credit Programs
- SCAQMD Rule 2202 Air Quality Investment Program
- SCAQMD RECLAIM Air Quality Investment Program for NOx
- Emission Credit Programs encompassed in the SCAQMD Rule 1600-series and 1309.1
- 1B Bond Program
- AB 118 Funding Program

Replacement and repower projects are **limited to only** those involving diesel-to-alternative fuel, diesel-to-dual fuel technology, and diesel-to-diesel fuel engines or vehicles. **All projects must meet the program's cost-effectiveness limits and be operational no later than May 31, 2018.** No administrative or vehicle operational costs are eligible.

It is expected that multiple awards will be granted under this PA, subject to the approval of the SCAQMD Governing Board.

All proposals will be evaluated based on criteria set forth in this PA. The SCAQMD will evaluate and/or verify information submitted by the applicant. At SCAQMD's discretion, consultants to the SCAQMD may conduct all or part of such evaluation and/or verification. Data verification during the evaluation and contracting process may cause initial cost-effectiveness rankings, and associated awards, to change. Furthermore, the SCAQMD reserves the right to make adjustments to awards based on the subsequent verification of information as well as changes in cost-effectiveness.

IMPORTANT PROGRAM INFORMATION

- Fleets with a total statewide equipment horsepower over 20,000 hp and with 40 percent or more of their vehicles at Tier 0 and Tier 1 emission levels as of January 1, 2008, are subject to the SOON Program and are required to apply for funding. Fleets not meeting both of the above criteria on January 1, 2008, may voluntarily participate in this program and apply for funding.
- For this program cycle, all projects will be eligible for a maximum seven (7) year operational requirement within the South Coast Air District. Shorter project life will be considered on a case-by-case basis and may be required by the CMP Guidelines. However, a shorter project life may affect the project's ranking relative to other project applicants and the amount of funding that can be provided.
- The annual hours used to calculate cost-effectiveness will be included in the contract. An extension of the contract or partial payback of funds may be required if the proposed annual hours are not achieved.
- For all repower projects, fleets are **not** required to but may install the highest level verified diesel emission control system (VDECS) at their own cost.
- Retrofit projects which can achieve NOx reductions may be funded on a case-bycase basis.
- Replacement, repowers or NOx retrofits projects funded under SOON are ineligible for compliance with the base rule until the end of the contract period.
- Applicants <u>must</u> provide vendor quotes with their application to document the cost of implementing the proposed technology. All quotes must have been obtained within 90 days of application submittal. Applicants may be required to submit quotes from more than one technology provider.
- Applicants must demonstrate that they are in full compliance with all CARB applicable regulations and that vehicle/equipment funding requests under this Program provide surplus emissions reductions. Applicants are required to submit a compliance plan showing how they will comply with the targets of CARB's In-Use Off-Road Vehicle regulation throughout the contract term, as well as how the new projects under this PA will meet SOON NOx targets in 2017 and 2020.
- Applicants must ensure that the vehicle/equipment to be purchased or installed is in compliance with all applicable federal, state and local air quality rules and regulations and that it will maintain compliance for the full contract term.
- Any associated tax obligation with the award is the responsibility of the grantee.
- No third-party contracts will be executed.

- Pre- and post-inspection of all vehicles/engines/equipment approved for funding will be conducted by SCAQMD.
- Destruction of the engine/equipment being replaced is required.
- To avoid double dipping, applicants shall not apply for funding of the same equipment in any other air district.

POTENTIAL PROJECTS

All eligible projects must use certified technology or technology that has been verified by CARB for real and quantifiable emission reductions that go beyond any regulatory requirement. The following projects are eligible for SOON funding:

Repower Project

For a repower project, the new engine must be certified for sale in California to the current NOx emission standard (Tier 4 Final). If an engine meeting the current emission standard is not available or cannot be installed:

- A Tier 3 Replacement Engine rated at 175 hp or higher can be used for the repower project.
- A Tier 3 Replacement rated at 175 horsepower or less can be used for repower projects provided it complies with U.S. Environmental Protection Agency (EPA) requirements related to replacing in-use engines contained in the Code of Federal Regulations, Title 40, Section 1068.240.
- For off-road equipment with similar modes of operation to on-road vehicles, other possible options include the replacement of an older diesel off-road engine with a new on-road engine certified to an emission standard equal to or cleaner than the Tier 4 Final off-road emission standard or a newer emission certified alternative fuel engine.

Retrofit Project

For a retrofit project, the retrofit technology must be:

- Verified by CARB to reduce NOx or NOx plus PM for the specific engine for which funding is requested.
- In compliance with established durability and warranty requirements and costeffectiveness criteria.

Diesel Particulate Filters (DPFs) and other devices that are not verified to reduce NOx are not eligible for SOON funding. The applicant will find more information on VDECS, including a list of currently verified DECS at http://www.arb.ca.gov/diesel/verdev/verdev.htm.

Replacement Project

For replacement projects, the replacement vehicle/equipment must be powered by a Tier 4 Final engine. If a vehicle/equipment with a Tier 4 Final engine will not be available within 6 months of the application submittal, vehicle/equipment with an Interim Tier 4 or Tier 3 engine may be purchased.

PROJECT CRITERIA

The SCAQMD retains the authority to impose more stringent additional requirements in order to address local concerns.

- Off-road CI equipment eligible for SOON Program funding includes equipment 25 hp (19 kilowatt) or greater. The complete definition can be found in CARB's In-Use Off-Road Diesel regulation at <u>http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm</u>.
- SOON Program grants can be no greater than a project's incremental cost (85% of quotation for repower projects, 80% of quotation for replacement projects). The incremental cost shall be reduced by the value of any current financial incentive that reduces the project price, including but not limited to tax credits or deductions, grants, or other public financial assistance.
- Applicants must ensure that the vehicle/equipment to be purchased or installed is in compliance with all applicable federal, state and local air quality rules and regulations and that it will maintain compliance for the full contract term.
- The certification emission standard and Tier designation for the engine must be determined from the CARB's Executive Order issued for that engine, not by the engine model year. Executive orders for off-road engines may be found at http://www.arb.ca.gov/msprog/offroad/cert/cert.php.
- Reduced-emission engines or retrofits must be certified/verified for sale in California and must comply with durability and warranty requirements. These may include new CARB-certified engines and verified diesel emission control strategies.
- New vehicles equipped with Tier 4 family emission limits (FEL) engines certified to Tier 3 or Interim Tier 4 standards are eligible for SOON Program funding. However, those engines will have their cost-effectiveness calculated as though they were Tier 3 engines.
- Equipment manufactured under the "Flexibility Provisions for Equipment Manufacturers", as detailed in Title 13, CCR, section 2423(d), are eligible for SOON Program funding provided their engines are certified to Tier 3 or Interim Tier 4 standards.
- Class 7 diesel forklifts are the only diesel forklifts eligible for SOON Program funding and are subject to all off-road project criteria. The SCAQMD must obtain and verify documentation of the classification of the forklift prior to funding.
- If repower with an engine meeting the current applicable standard is technically infeasible, unsafe or cost prohibitive, the replacement engine must meet the most current practicable previously applicable emission standard and cost-effectiveness criteria and, if rated at less than 175 hp, must comply with the requirements related to replacing in-use engines contained in Title 40, Code of Federal Regulations, Section 1068.240.
- Replacement of an uncontrolled diesel off-road engine with a new on-road engine certified to an emission standard equal to or lower than the Tier 4 Final off-road emission standard or a newer emission-certified alternative-fuel engine may be eligible for funding as off-road equipment with similar modes of operation as on-road vehicles on a case-by-case basis. Other equipment may be eligible for funding on a case-by-case basis. These repowers must meet all other applicable project criteria.

- Applicants must provide their DOORS Fleet Compliance Snapshot.
- Applicants must provide the DOORS EIN for each vehicle for which funding is requested.
- Applicants must provide proof they have owned each vehicle for which funding is requested for a replacement vehicle for at least two years.
- Applicants must provide a current Compliance Plan using the SCAQMD fleet calculator or the DOORS calculator demonstrating compliance with the Off-Road regulation throughout the anticipated contract period.
- Applicants must provide at least the most recent two (2) years of hour-meter readings.

Potential projects that fall outside of these criteria may be considered on a case-by-case basis if evidence provided to the air district suggests potential surplus, real, quantifiable and enforceable emission reduction benefits.

MAXIMUM ELIGIBLE FUNDING

The maximum eligible funding amount and project life for each SOON project type is summarized below.

Project	Maximum Funding	Maximum Project Life
Replacement	80% of vehicle/equipment cost	 Five years, except: Three years for excavators, skid steer loaders, and rough terrain forklifts Seven years crawler tractors, off-road tractors, rubber tired dozers, and workover rigs. Ten years for all off-road farm equipment
Repower	85% of engine cost plus parts and labor necessary for installation	Seven years
Retrofit	100% of retrofit device cost plus parts and labor for installation, plus estimated cost for maintenance during project life.	Five years

COST-EFFECTIVENESS EVALUATION DISCUSSION

The SOON Program is required to meet the requirements of the CMP by using the costeffectiveness calculations methodology found in Appendix C of the CMP Guidelines (see <u>http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm</u>).

REPORTING AND MONITORING

All participants in the SOON Program are required to keep appropriate records during the full contract period. Project life is the number of years used to determine the cost-

effectiveness and is equivalent to the contract life. All equipment must operate in the SCAQMD for this full project life. The SCAQMD shall conduct periodic reviews of each project's operating records to ensure that the engine is operated as stated in the program application. Annual records must contain the following, at a minimum:

- Total Hours of Operation
- Total Hours of Operation in the South Coast Air District
- Annual Maintenance and Repair Information

Records must be retained and updated throughout the project life and made available for SCAQMD inspection. The SCAQMD may conduct periodic reviews of each vehicle/equipment project's operating records to ensure that the vehicle is operated as required by the project requirements.

PROGRAM ADMINISTRATION

The SOON Program will be administered locally by the SCAQMD through the Science and Technology Advancement Office.

FUNDING CATEGORIES

Only equipment identified in the CARB In-Use Off-Road Diesel Vehicle regulation is eligible for this Program.

PROJECT EVALUATION/AWARDS

SCAQMD staff will evaluate all submitted proposals and make recommendations to the SCAQMD Governing Board for final selection of project(s) to be funded. Proposals will be evaluated on the cost-effectiveness of emissions reduced on a vehicle/equipment-by-vehicle/equipment basis, as well as a project's disproportional impact evaluation. (This is discussed further in Section IV).

SCHEDULE OF EVENTS

Release of #PA2016-06

March 4, 2016

All Applications due by 1:00 p.m.

Wednesday, June 1, 2016

Anticipated Award Consideration by SCAQMD Board October 7, 2016

ALL PROPOSALS MUST BE RECEIVED AT THE SCAQMD HEADQUARTERS NO LATER THAN 1:00 P.M. ON WEDNESDAY, JUNE 1, 2016

Postmarks will not be accepted. Faxed or email proposals will not be accepted. Proposers may hand-deliver proposals to the SCAQMD by submitting the proposal to the SCAQMD Public Information Center. The proposal will be date and timestamped and the person delivering the proposal will be given a receipt.

SCAQMD may issue subsequent solicitations if insufficient applications are received in the initial solicitation.

STATEMENT OF COMPLIANCE

Government Code Section 12990 and California Administrative Code, Title II, Division 4, Chapter 5, require employers to agree not to unlawfully discriminate against any employee or applicant because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, sex, or age. A statement of compliance with this clause is included in all SCAQMD contracts.

SECTION II: WORK STATEMENT/SCHEDULE OF DELIVERABLES

All applicants that are selected for funding awards must complete the Work Statement and Schedule of Deliverables described below as part of the contracting process. Development of these materials for the initial application is NOT required; however, applicants must sign the application form indicating their understanding of the requirements for submittal of additional project information to finalize a contract and that all vehicles, engines or equipment must be in operation no later than **May 31, 2018**.

WORK STATEMENT

The scope of work involves a series of tasks and deliverables that demonstrate compliance with the requirements of the SOON Program as administered by CARB and the SCAQMD. The project applicant is responsible for developing detailed project plans that address the program criteria. In addition, alternative fuel project applicants must discuss their plan for refueling the proposed vehicles/equipment, and if appropriate, should provide a letter of agreement from their fuel provider.

At a minimum, any contract for funding the proposed project must meet the following criteria:

- Emission reductions must be real, quantifiable, enforceable and surplus in accordance with CARB and SCAQMD guidelines.
- Cost-effectiveness of the project must meet the minimum requirement of the Carl Moyer guidelines.
- Project engines or equipment must operate in-service for the full project life.
- All vehicles/engines/equipment must be in operation no later than May 31, 2018.
- Appropriate annual usage records must be kept and reported to SCAQMD during the project life (i.e., annual hours of operation).
- A compliance plan that demonstrates compliance with the off-road regulation throughout the contract period must be provided.
- Ensure that the project complies with other local, state and federal programs, and resulting emission reductions from a specific project are not required as a mitigation measure to reduce adverse environmental impacts that are identified in an environmental document prepared in accordance with the California Environmental Quality Act or the National Environmental Policy Act.
- If requested, a contractor must provide a financial statement and bank reference, or other evidence of financial ability to fulfill contract requirements.

DELIVERABLES

The contract will describe how the project will be monitored and what type of information will be included in project progress reports. At a minimum, the SCAQMD expects to receive the following reports:

- Quarterly status reports until the vehicle(s) or equipment purchase(s), repower(s), or retrofit(s) has been completed and the vehicle(s) is operational. These reports shall include a discussion of any problems encountered and how they were resolved, any changes in the schedule, and recommendations for completion of the project. These progress reports are required before payment for the purchase, repower or retrofit will be made.
- 2. An annual report, throughout the project life, which provides the annual hours of operation, where the vehicle(s) or equipment(s) was operated, annual fuel consumption, and operational and maintenance issues encountered and how they were resolved. SCAQMD reserves the right to verify the information provided.

SECTION III: PROPOSAL SUBMITTAL REQUIREMENTS

Proposers **must** complete the appropriate application forms committing that the information requested in Section II, Work Statement/Schedule of Deliverables will be submitted if the Proposer's project is selected for funding.

In addition, Conflict of Interest and Project Cost information, as described below, must also be submitted with the application. It is the responsibility of the proposer to ensure that all information submitted is accurate and complete.

CONFLICT OF INTEREST

Applicant must address any potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the SCAQMD. Although the proposer will not be automatically disqualified by reason of work performed for such firms, the SCAQMD reserves the right to consider the nature and extent of such work in evaluating the proposal. Conflicts of interest will be screened on a case-by-case basis by the SCAQMD General Counsel's Office. Conflict of interest provisions of the state law, including the Political Reform Act, may apply to work performed pursuant to this contract. Please discuss potential conflicts of interest on the application form entitled "Campaign Contributions Disclosure".

PROJECT COST

Applicants must provide cost information that specifies the amount of funding requested and the basis for that request by attaching vendor quotes to the application. Applicants need to inform vendors of the time frame of the award process so that they can accurately quote costs based on the anticipated order/purchase date. Note that no purchase orders may be placed or work performed for projects awarded under this PA until after the date of award approval by the SCAQMD Governing Board. Any orders placed or payments made in advance of an executed contract with the SCAQMD are done at

the risk of the applicant. The SCAQMD has no obligation to fund the project until a contract is fully executed by both parties.

The SOON Program funds only the differential cost between existing technology and low-emission technology. The proposed low-emission technology must be CARBcertified in most cases.¹ Proposals will be ranked by cost-effectiveness on a vehicle/equipment-by-vehicle/equipment basis. The cost-effectiveness limit has been established at \$18,260/ton of emissions reduced. The cost-effectiveness may be changed depending on the demand for program funds. No fueling infrastructure, administrative or operational costs will be funded.

All project costs must be clearly indicated in the application. In addition, applicants must include any sources of cofunding and the amount of each cofunding source in the application. Applicants are cautioned that the project life period used in calculating emissions reductions will be used to determine the length of their data reporting obligation and the length of their contract. In other words, a project applicant using a seven year life for the emissions reduction calculations will be required to operate and track activity for the project vehicle for the full seven years. A seven-year life (shorter project life will be considered on a case-by-case basis and may be required for replacement projects) will be used for all projects subject to #PA2016-06.

PROPOSAL SUBMISSION

All proposals must be submitted according to specifications set forth herein.

Application Forms

Program application forms are provided after this document. These must be completed and submitted with other required documents (i.e., Certifications and Representations and vendor quotations) discussed in the application and below.

Certifications and Representations

Contained in Form A-1 of this PA are five forms <u>which must also</u> be completed and submitted with the application.

Compliance Plan

Projects funded by SOON monies must result in emission reductions that are surplus to those that would be realized by fleets complying with the base rule. Fleets are required to submit a compliance plan in electronic format to demonstrate how they comply with both the base rule as well as the SOON provision of the rule. Fleet owners, at a minimum, must provide the following information for each year, 2010 through 2022 inclusive:

- A vehicle list which includes, but is not limited to, vehicle type, manufacturer, model, model year, and whether the equipment is included in the base or SOON fleet for each piece of equipment in the fleet.
- Information including, but not limited to, calculations, fleet information, etc., showing compliance with the base rule fleet target levels or compliance with the BACT turnover and retrofit requirements. Either the CARB DOORS calculator (individual

¹ Note that non-CARB certified engines/devices requiring an experimental permit from CARB may be considered, but the project will require special CARB approval.

tabs for each future year) or the Excel SOON fleet calculator spreadsheet may be used.

• Information including, but not limited to, calculations, fleet information, etc., showing whether the vehicles funded by the SOON program are in compliance with the SOON NOx fleet average target levels.

SOON Compliance Plan documents and the Microsoft Excel SOON fleet calculator can be downloaded at the SCAQMD SOON website: <u>www.aqmd.gov/soon</u>

Due Date

The proposer shall submit four (4) complete paper copies of the application and an electronic copy (CD or flash drive) of the compliance plan and completed application in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the proposer and the words "Program Announcement #PA2016-06". Paper applications shall be submitted in an eco-friendly format: stapled, not bound, black and white print; no three-ring, spiral or plastic binders, and no card stock or colored paper. All proposals must be received no later than <u>1:00 p.m., on Wednesday, June 1,</u> <u>2016</u>. Postmarks are not accepted as proof of deadline compliance. Faxed or emailed proposals will not be accepted. Proposals must be directed to:

Procurement Unit South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

Any correction or resubmission done by the proposer will not extend the submittal due date.

Grounds for Rejection

A proposal may be immediately rejected if:

- 1. It is not prepared in the format described.
- 2. It is not signed by an individual authorized to represent the firm.
- 3. Does not include current cost quotes, Contractor Statement Forms, and other forms required in this PA.

Disposition of Proposals

The SCAQMD reserves the right to reject any or all proposals. All responses become the property of the SCAQMD. One copy of the proposal shall be retained for SCAQMD files. Additional copies and materials will be returned only if requested and at the proposer's expense.

Modification or Withdrawal

Once submitted, proposals cannot be altered without the prior written consent of SCAQMD. All proposals shall constitute firm offers and may not be withdrawn for a period of ninety (90) days following the last day to accept proposals.

SECTION IV: PROPOSAL EVALUATION/CONTRACTOR SELECTION CRITERIA

SCAQMD staff will evaluate all submitted proposals and make recommendations to the SCAQMD Governing Board for final selection of project(s) to be funded. Proposals will be evaluated based on the cost-effectiveness of emissions reduced on a vehicle/equipment-by-vehicle/equipment basis. Be aware that there is a possibility that due to program priorities, cost-effectiveness and/or funding limitations, project applicants may be offered only partial funding, and not all proposals that meet minimum cost-effectiveness criteria may be funded.

Funding will be awarded based on the cost-effectiveness of each piece of equipment. Distribution will be as follows:

- 1. 75% of total project funding will be awarded to the most cost-effective projects. No individual company shall receive more than 10% of this portion of the funding.
- 2. The remaining 25% of funding will be distributed so that at least one piece of equipment per applicant is funded, until funding is expended. If funds are still remaining after this distribution, they will be distributed according to cost-effectiveness.

In addition, at least 50 percent of the CMP funds must be spent in areas that are most significantly impacted by air pollution and are low income or communities of color, or both (i.e., receive a disproportionate impact from these factors). CARB issued broad goals and left the details of how to implement this requirement to each air agency. SCAQMD uses the following method to meet these requirements.

- 1. All projects must qualify for the CMP by meeting the cost-effectiveness limit of \$17,720 per ton of emissions controlled.
- 2. All projects will be evaluated according to the following criteria to qualify for disproportionate impact funding:
 - a. Poverty Level: All projects in areas where at least 10 percent of the population falls below the Federal poverty level, based on the year 2000 census data, will be eligible to be included in this category
 - b. PM Exposure: All projects in areas with the highest 15 percent of PM concentration will be eligible to be ranked in this category. The highest 15 percent of PM concentration is 46 micrograms per cubic meter and above, on an annual average
 - c. Toxic Exposure: All projects in areas with a cancer risk of 1,000 in a million and above (based on MATES II estimates) will be eligible to be ranked in this category.
- 3. Fifty percent of the available funding from this PA will be allocated among proposals located in disproportionately impacted areas. If available funding is not exhausted with the outlined methodology, then staff will return to the SCAQMD Governing Board for direction. If, on the other hand, funding requests exceed the available funding levels, then all qualified projects will be ranked for poverty level, PM and toxic exposures. The maximum score will be comprised of 40 percent for poverty level and 30 percent each for PM and toxic exposures

4. All the proposals not awarded under the 50 percent disproportional impact funding will then be ranked according to cost-effectiveness, with the most cost-effective project funded first and then in descending order for each funding category until the remainder of the CMP funds are exhausted.

SECTION V: PAYMENT TERMS

For all projects, payment will be made upon installation and commencement of operation of the funded equipment for 85% of the submitted repower invoice (80% of the submitted replacement invoice) or the contract maximum amount, whichever is less.

CONTACT FOR ADDITIONAL INFORMATION

Questions regarding the content or intent of this PA, procedural matters, sample contract, the compliance plan worksheet, or locations of workshops can be found at the SOON website (<u>http://www.aqmd.gov/home/programs/business/business-detail?title=off-road-diesel-engines&parent=vehicle-engine-upgrades</u>), or can be addressed to:

Adewale Oshinuga Science and Technology Advancement South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765 Phone: (909) 396-2599/Fax: (909) 396-3324

The remainder of this page is left intentionally blank.

Application Forms

FORM A-1 - GENERAL PROJECT INFORMATION APPLICATION

All Sections of Form A-1 must be submitted for an application to be deemed complete. If information does not pertain to your project, please write "NA" on the form and sign it. In addition, supplemental forms are required for each piece of requested equipment.

I. APPLICANT INFORMATION

Company name/ Organization name/ Individual name:						
Business address (Mailing address): Street:						
City:	City: State: Zip code:					
Contact name and title:						
Email:						
Phone: ()	Fax: ()					
Person with contract signing authority (if different from above):						

I hereby certify that all information provided in this application and any attachments are true and correct.

Printed Name of Responsible Party:	Title:
Signature of Responsible Party:	Date:

Complete this section if application was prepared by another person

I have completed the application, in whole or in part, on behalf of the applicant.

Printed Name:	Title:
Signature:	Date:
Amount Being Paid for Application Completion in Whole or Part:	Source of funding to 3rd party:

II. FUNDING INFORMATION

Total Number of Equipment Included in Project:			
Total Number of Engines Included in Project:			
Total Amount of Funding Requested: \$	Total Applicant Cofunding Amount (if any): \$		

III. GENERAL PROJECT INFORMATION

There are three types of emission reduction projects:

New Purchase - Purchasing a new vehicle or piece of equipment with an engine that is cleaner than the current year standard.

Repower - Replacing an existing engine with a new reduced-emission engine. **Retrofit** – Installing an ARB-verified emission control system on an in-use engine.

IMPORTANT REMINDER: Only projects that are demonstrated to be surplus to California Air Resources Board (CARB) regulations are eligible for CMP (CMP) funding. Please ensure your proposed project is eligible prior to submitting an application.

Check the appropriate box(es) below for each type of project and indicate the total number of equipment/engines included in your project.

B. Off-Road Diesel - SOON

(Please Circle Fleet Size)

Diesel Fleet Size (Total hp): Small \leq 2,500 Medium 2,501-5,000 Large > 5,000

Equipment Replacement – Total pieces of equipment: _____ A supplemental application (Form B-1) must be completed for each piece of new equipment

Repower Only– Total engines to be repowered: ______ A supplemental application (Form B-2) must be completed for each engine repower

Repower with NOx Retrofit – Total engines to be repowered/retrofit: _____ A supplemental application (Form B-2) must be completed for each engine repower

NOx Retrofit Only – Total engines to be retrofit: _____ A supplemental application (Form B-3) must be completed for each retrofit

IV. FUNDING DISCLOSURE

Have any engines or vehicles listed in this application been awarded funding from the Air Resources Board or another public agency or are any being considered for funding?

Yes
NIa

Yes
 No
 If "yes", complete the following for each engine or vehicle:

Agency applied to:
Date/Number of Agency Solicitation:
Total Funding Amount Requested or Awarded: \$
Amount per Unit Requested or Awarded: \$
Status:
Do you plan to claim a tax credit or deduction for the project vehicle? Yes No
If "yes", please indicate the estimated tax credit amount to be claimed per vehicle:

Application Statement – Please Read and Sign

All information provided in this application will be used by SCAQMD staff to evaluate the eligibility of this application to receive program funds. SCAQMD staff reserves the right to request additional information and can deny the application if such requested information is not provided by the requested deadline. Incomplete or illegible applications will be returned to applicant or vendor, without evaluation. An incomplete application is an application that is missing information critical to the evaluation of the project.

- I certify to the best of my knowledge that the information contained in this application is true and accurate.
- I understand that all vehicles/equipment, both existing and new, must be made available within the SCAQMD boundaries for inspection, unless otherwise approved by SCAQMD's Project Officer.
- I understand that, if awarded funding under the CMP, development and submittal of a detailed work statement, with deliverables and schedule is a requirement of the contracting process.
- I understand that it is my responsibility to ensure that all technologies are either verified or certified by the CARB to reduce NOx and/or PM pollutants. CARB Verification Letters and/or Executive Orders are attached, as applicable.
- I understand that it is my responsibility to ensure that the vehicle/equipment to be purchased or installed is in compliance with all applicable federal, state, and local air quality rules and regulations and that it will maintain compliance for the full Contract term.
- I understand that off-road equipment applicants subject to CARB's In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation must submit information regarding fleet size and compliance status. This must include the Diesel Off-Road On-line Reporting System (DOORS) ID of the fleet and the DOORS Equipment Identification Number (EIN) of the funded equipment. All documentation submitted must be signed and dated by the applicant and include language certifying that the fleet list provided is accurate and complete.
- I understand that for SOON repower projects, I am **not** required to install the highest level available verified diesel emission control device (VDECS).
- I understand that there may be conditions placed upon receiving a grant and agree to refund the grant (or pro-rated portion thereof) if it is found that at any time I do not meet those conditions and if directed by the SCAQMD in accordance with the contract agreement.
- I understand that, for this equipment, I will be prohibited from applying for any other form of emission reduction credits for Moyer-funded vehicles/engines, including: Emission Reduction Credit (ERC); Mobile Source Emission Reduction Credit (MSERC) and/or Certificate of Advanced Placement (CAP), for all time, from the SCAQMD, CARB or any other Air Quality Management or Air Pollution Control District.
- The proposed project has not been funded and is not being considered for CMP funds by another air district, CARB or any other public agency.

agreement eventually reached from this application, I agree to ensure the equivalent project emissions reductions, or to return grant funds to the SCAQMD as required by the contract.

In the event that the vehicle(s)/equipment do not complete the minimum term of any

- I have the legal authority to apply for grant funding for the entity described in this application.
- Disclosure of that value of any current financial incentive that directly reduces the project price, including tax credits or deductions, grants, or other public financial assistance for the same engine is required. To avoid double counting of incentives, all tax credits or deductions, grants, or other public financial assistance must be deducted from the CMP request. I understand that third party contracts are not permitted. A third party may, however complete an application on an owner's behalf. Third parties are required to list how much compensation, if any, they are receiving to prepare the application(s), and to certify that no CMP funds are being used for this compensation. (see below)
- I understand that additional project information must be submitted to finalize a contract. This
 information may be found under Section II: Work Statements/Schedule of Deliverables in the
 PA.
- I understand that all vehicles, engines or equipment funded by this program must be operational within eighteen (18) months of contract execution, or by May 31, 2018, whichever is earlier.
- I have initialed this bullet to indicate that there are no potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the SCAQMD. If this bullet is not initialed, I have attached a description to this application of the potential conflict of interest, which will be screened on a case-by-case basis by the SCAQMD General Counsel's Office. There is no potential conflict of interest: _____ (Please initial if applicable, otherwise attach separate sheet describing the potential conflict.)

Applicant's Signature

Date

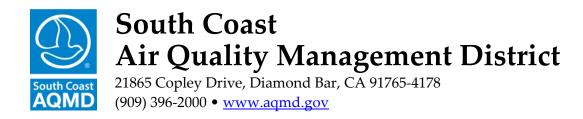
Applicant's Name (please print)

Title

Please initial each section.

(See #PA2016-06 for additional information and requirements.):

 The purchase of this low-emission technology is NOT required by any other local, state, and/or federal rule or regulation. The definitions of qualifying projects are described in #PA2016-06. These definitions have been reviewed and this application is consistent with those definitions.
 The vehicle/engine will be used within the SCAQMD boundaries (with the emission reduction system operating) for at least the projected usage shown in this application, and no less than 75 percent of the time.
 All project applicants must submit documentation that supports the activity claimed in the application (i.e., fuel receipts, mileage logs and/or hour-meter readings covering the last two years). This documentation is attached.
The grant contract language cannot be modified without the written consent of all parties. I have reviewed and accepted the sample contact language.
I understand that an IRS Form 1099 may be issued to me for incentive funds received under the Moyer Program. I understand that it is my responsibility to determine the tax liability associated with participating in the Moyer Program.
I understand that a SCAQMD-funded Global Positioning System (GPS) unit may be installed on vehicles/equipment not operating within SCAQMD boundaries full time. I will submit data as requested and otherwise cooperate with all data reporting requirements. I also understand that the additional cost of the GPS unit will be added to the project cost when calculating cost-effectiveness, though the SCAQMD will pay for this system directly.
I understand that the SCAQMD has the right to conduct unannounced inspections for the full project life to ensure the project equipment is fully operational at the activity level committed to by the contract.
I understand that all emission reductions resulting from funded projects will be retired. To avoid double counting of emission reductions, project vehicles and/or equipment may not receive funding from any other government grant program that is designed to reduce mobile source emissions.
 I understand that a tamper proof, non-resettable digital hour meter/odometer must be installed on all vehicles/equipment and that the digital hour meter/odometer will record the hours/miles accumulated within the SCAQMD boundaries. This cost is my responsibility.
I understand that any tax credits claimed must be deducted from the CMP request. Please check one:
I do not plan to claim a tax credit or deduction for costs funded by the CMP.
I do plan to claim a tax credit or deduction for costs funded by the CMP. If so, please indicate amount here: \$
 I plan to claim a tax credit or deduction only for the portion of incremental costs not funded by the CMP. If so, please indicate amount here: \$



Business Information Request

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

If you do not return this information, we will <u>not</u> be able to establish you as a vendor. This will delay any payments and would <u>still</u> necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

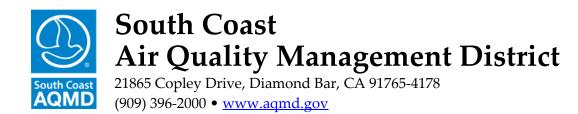
Sincerely,

Michael B. O'Kelly Chief Financial Officer

DH:tm

Enclosures: Business Information Request Disadvantaged Business Certification W-9 Form 590 Withholding Exemption Certificate Federal Contract Debarment Certification Campaign Contributions Disclosure Direct Deposit Authorization General Application Information Page 7 of 22

REV 9/15 Form A-1



BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business Check One:	 Individual DBA, Name, County Filed in Corporation, ID No LLC/LLP, ID No Other

REMITTING ADDRESS INFORMATION

Address										
Address										
City/Town										
State/Province					Zip					
Phone	()	-	Ext	Fax	()	-		
Contact					Title					
Email Address										
Payment Name if Different										

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE), minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below <u>for contracts or purchase orders funded in whole</u> <u>or in part by federal grants and contracts.</u>

- 1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
- 2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
- 3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
- 4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
- 5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
- 6. If subcontracts are to be let, take the above affirmative steps.

<u>Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with</u> <u>SCAQMD Procurement Policy and Procedure:</u>

Check all that apply:	
 Small Business Enterprise/Small Business Joint Venture Local business Minority-owned Business Enterprise 	 Women-owned Business Enterprise Disabled Veteran-owned Business Enterprise/DVBE Joint Venture Most Favored Customer Pricing Certification
Percent of ownership:%	
Name of Qualifying Owner(s):	

State of California Public Works Contractor Registration No. ______. MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

NAME

TITLE

TELEPHONE NUMBER

DATE

Definitions

Disabled Veteran-Owned Business Enterprise means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

Joint Venture means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

Local Business means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

Minority-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

"Minority" person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

Small Business Enterprise means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
 - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
 - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

Small Business Joint Venture means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

Women-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

Most Favored Customer as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

Form W-9 (Rev. December 2014) Department of the Treasury Internal Revenue Service

Give Form to the requester. Do not send to the IRS.

6 5	2 Business name/disregarded entity name, if different from above								
pe ons on page	3 Check appropriate box for federal tax classification; check only one of the following seven boxes: Individual/sole proprietor or C Corporation S Corporation Partnership single-member LLC	Trust/es	state	certa instru	emptior in entiti ictions (ipt paye	es, not on pag	individ je 3):	uals;	
Print or type Specific Instructions	Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the the tax classification of the single-member owner.	-	/e for	code	Exemption from FATCA reporting code (if any)				
2.2	Other (see instructions) >			(Applie	s to accou	nts maint	ained out:	ide the	J.S.)
pecifi	5 Address (number, street, and apt. or suite no.)	equester's	name	e and ad	dress (o	ptiona	ul)		
See S	6 City, state, and ZIP code								
	7 List account number(s) here (optional)								
Pa	rt I Taxpayer Identification Number (TIN)								
	r your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid		cial s	ecurity i	number				
resid	sup withholding. For individuals, this is generally your social security number (SSN). However, for lent alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other ies, it is your employer identification number (EIN). If you do not have a number, see How to get a			-		-			
TIN 0	on page 3.	or							
Note	. If the account is in more than one name, see the instructions for line 1 and the chart on page 4	for Em	ploye	er identi	ficatior	numl	ber		٦
	elines on whose number to enter.								f
9				-					
Pa	rt II Certification								
Unde	er penalties of perjury, I certify that:								
1. T	he number shown on this form is my correct taxpayer identification number (or I am waiting for a	number to	o be	issued	to me);	and			
S	am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I ervice (IRS) that I am subject to backup withholding as a result of a failure to report all interest or o longer subject to backup withholding; and								

3. I am a U.S. citizen or other U.S. person (defined below); and

4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign	Signature of
Here	U.S. person ►

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

Date 🕨

Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)

- · Form 1099-C (canceled debt)
- · Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.
- If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.
- By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

 Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See What is FATCA reporting? on page 2 for further information.

Cat. No. 10231X

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

· An individual who is a U.S. citizen or U.S. resident alien;

 A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;

An estate (other than a foreign estate); or

A domestic trust (as defined in Regulations section 301,7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

 In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;

 In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and

 In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

 The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

 You do not certify your TIN when required (see the Part II instructions on page 3 for details), Page 2

3. The IRS tells the requester that you furnished an incorrect TIN,

 The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

 You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See Exempt payee code on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see Special rules for partnerships above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; do not leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. Individual. Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. Sole proprietor or single-member LLC. Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation. Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. Other entities. Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. Disregarded entity. For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, name." If the owner of the entity is also a disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code

Generally, individuals (including sole proprietors) are not exempt from backup withholding.

 Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.

 Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

 Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1 – An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2-The United States or any of its agencies or instrumentalities

3-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4-A foreign government or any of its political subdivisions, agencies, or instrumentalities

5-A corporation

6-A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7-A futures commission merchant registered with the Commodity Futures Trading Commission

8-A real estate investment trust

9-An entity registered at all times during the tax year under the Investment Company Act of 1940

10-A common trust fund operated by a bank under section 584(a)

11-A financial institution

12-A middleman known in the investment community as a nominee or custodian

13-A trust exempt from tax under section 664 or described in section 4947 The following chart shows types of payments that may be exempt from backup

withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for	THEN the payment is exempt for
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D-A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section

1.1472-1(c)(1)(i)

E-A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G-A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I-A common trust fund as defined in section 584(a)

J-A bank as defined in section 581

K-A broker

L-A trust exempt from tax under section 664 or described in section 4947(a)(1) M-A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an TIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see Exempt payee code earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

 Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

 Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:		
1. Individual 2. Two or more individuals (joint account)	The individual The actual owner of the account or, if combined funds, the first individual on the account'		
 Custodian account of a minor (Uniform Gift to Minors Act) 	The minor ²		
 a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law 	The grantor-trustee' The actual owner'		
 Sole proprietorship or disregarded entity owned by an individual 	The owner ^a		
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i) (A))	The grantor*		
For this type of account:	Give name and EIN of:		
 Disregarded entity not owned by an individual 	The owner		
8. A valid trust, estate, or pension trust	Legal entity ⁴		
 Corporation or LLC electing corporate status on Form 8832 or Form 2553 	The corporation		
 Association, club, religious, charitable, educational, or other tax- exempt organization 	The organization		
11. Partnership or multi-member LLC	The partnership		
A broker or registered nominee	The broker or nominee		
 Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments 	The public entity		
 Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i) 	The trust		

List first and circle the name of the person whose number you furnish. If only one person on a

joint account has an SSN, that person's number must be furnished.

²Circle the minor's name and furnish the minor's SSN.

(B))

³You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see Special rules for partnerships on page 2. Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

Protect your SSN,

· Ensure your employer is protecting your SSN, and

Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information. [

2015 Withholding Exemption Certificate

CALIFORNIA FORM

590

2015 Withholding Exemption Certificate	390
The payee completes this form and submits it to the withholding agent.	
Withholding Agent (Type or print)	
Name	
	A Corp no. CA SOS file no.
Address (apt./ste., room, PO Box, or PMB no.)	
City (If you have a foreign address, see instructions.) State ZIP Co	de
Exemption Reason	
Check only one reason box below that applies to the payee.	
By checking the appropriate box below, the Payee certifies the reason for the exemption from the California income requirements on payment(s) made to the entity or individual.	tax withholding
Individuals — Certification of Residency: I am a resident of California and I reside at the address shown above. If I become a nonresident at any tim notify the withholding agent. See instructions for General Information D, Definitions.	ne, I will promptly
Corporations: The corporation has a permanent place of business in California at the address shown above or is qualifier California Secretary of State (SOS) to do business in California. The corporation will file a California tax re corporation ceases to have a permanent place of business in California or ceases to do any of the above, the withholding agent. See instructions for General Information D, Definitions.	turn. If this
Partnerships or Limited Liability Companies (LLCs): The partnership or LLC has a permanent place of business in California at the address shown above or is California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax retu or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purpos partnership (LLP) is treated like any other partnership.	Irn. If the partnership
Tax-Exempt Entities: The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 Internal Revenue Code Section 501(c) (insert number). If this entity ceases to be exempt from tax, the withholding agent. Individuals cannot be tax-exempt entities.	
□ Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit Sharing The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.	Plans:
California Trusts: At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. T California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any tin notify the withholding agent.	
Estates — Certification of Residency of Deceased Person: I am the executor of the above-named person's estate or trust. The decedent was a California resident at t The estate will file a California fiduciary tax return.	he time of death.
Nonmilitary Spouse of a Military Servicemember: I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief A requirements. See instructions for General Information E, MSRRA.	ct (MSRRA)
CERTIFICATE OF PAYEE: Payee must complete and sign below.	
Under penalties of perjury, I hereby certify that the information provided in this document is, to the best of my know correct. If conditions change, I will promptly notify the withholding agent.	ledge, true and
Payee's name and title (type or print) Telephone ()	
Payee's signature Date	
Duto	
For Privacy Notice, get FTB 1131 ENG/SP. 7061153 Form 5	90 c2 2014

2015 Instructions for Form 590

Withholding Exemption Certificate

References in these instructions are to the California Revenue and Taxation Code (R&TC).

General Information

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For information on California backup withholding, go to **ftb.ca.gov** and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to edd.ca.gov or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a Seller of California real estate. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from real estate withholding.

The following are excluded from withholding and completing this form:

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.

- Payments to nonresidents for royalties from activities sourced to California.
 - Distributions of California source income to nonresident beneficiaries from an estate or trust.
 - Endorsement payments received for services performed in California.
 - Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed certificate on the preprinted form, the withholding agent may accept as a substitute certificate a letter from the payee explaining why the payee is not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number. The withholding agent must retain a copy of the certificate or substitute for at least four years after the last payment to which the certificate applies, and provide it upon request to the FTB.

For example, if an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

D Definitions

For California non-wage withholding purposes, **nonresident** includes all of the following:

- Individuals who are not residents of California.
- Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnership's or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.
 Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military

Permanent Place of Business:

Personnel

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or if it is a foreign corporation qualified to transact intrastate business by the CA SOS. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

Domicile is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA.

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

Specific Instructions

Payee Instructions

Enter the withholding agent's name.

Enter the payee's information, including the taxpayer identification number (TIN) and check the appropriate TIN box.

You must provide an acceptable TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

Private Mail Box (PMB) – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

Foreign Address – Enter the information in the following order: City, Country, Province/ Region, and Postal Code. Follow the country's practice for entering the postal code. **Do not** abbreviate the country's name.

Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

Withholding Agent Instructions

Keep Form 590 for your records. **Do not** send this form to the FTB unless it has been specifically requested.

For more information, contact Withholding Services and Compliance, see Additional Information. The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
 The corporation ceases to have a permanent
- place of business in California or ceases to be qualified to do business in California.
- The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place of business in California.
- The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

Additional Information

For additional information or to speak to a representative regarding this form, call the Withholding Services and Compliance telephone service at: Telephone: 888.792.4900

916.845.4900 Fax: 916.845.9512

OR write to:

WITHHOLDING SERVICES AND COMPLIANCE MS F182 FRANCHISE TAX BOARD PO BOX 942867 SACRAMENTO CA 94267-0651

You can download, view, and print California tax forms and publications at **ftb.ca.gov**.

OR to get forms by mail write to:

TAX FORMS REQUEST UNIT FRANCHISE TAX BOARD PO BOX 307 RANCHO CORDOVA CA 95741-0307

For all other questions unrelated to withholding

or to access the TTY/TDD numbers, see the information below.

Internet and Telephone Assistance

Website fth ca nov

Telephone:	800.852.5711 from within the
	United States
	916.845.6500 from outside the
	United States

TTY/TDD: 800.822.6268 for persons with hearing or speech impairments

Asistencia Por Internet y Teléfono

- Sitio web: **fb.ca.gov** Teléfono: 800.852.5711 dentro de los Estados Unidos 916.845.6500 fuera de los Estados Unidos
- TTY/TDD: 800.822.6268 para personas con discapacidades auditivas o del habla

Page 2 Form 590 Instructions 2014



CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor *plus* contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website (<u>www.aqmd.gov</u>). The list of current MSRC members/alternates can be found at the MSRC website (<u>http://www.cleantransportationfunding.org</u>).

SECTION I.

Contractor (Legal Name):

DBA, Name _____, County Filed in _____

Corporation, ID No._____

LLC/LLP, ID No.

List any parent, subsidiaries, or otherwise affiliated business entities of Contractor: *(See definition below).*

SECTION II.

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

YesNoIf YES, complete Section II below and then sign and date the form.If NO, sign and date below. Include this form with your submittal.

Campaign Contributions Disclosure, continued:

Nan	ne of Contributor		
	Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Nan	ne of Contributor		
	Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Nan	ne of Contributor		
	Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Nan	ne of Contributor		
	Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
	e:	-	
	DEFINITIO	ONS	
	Parent, Subsidiary, or Otherwise Related Business E	Entity (2 Cal. Code of Regs., §1870	3.1(d).)
(1)	Parent subsidiary. A parent subsidiary relationship exists when possessing more than 50 percent of the voting power of anothe		tly owns shares
(2)	Otherwise related business entity. Business entities, including organizations and enterprises operated for profit, which do not if any one of the following three tests is met:		
	(A) One business entity has a controlling ownership interes	t in the other business entity.	
	(B) There is shared management and control between the e and control, consideration should be given to the follow		re is shared management
	 (i) The same person or substantially the same person (ii) There are common or commingled funds or assets (iii) The business entities share the use of the same of or personnel on a regular basis; 	;	

- (iv) There is otherwise a regular and close working relationship between the entities; orA controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also (C) is a controlling owner in the other entity.



Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

- Individual (Employee, Governing Board Member)
- Vendor/Contractor

Changed Information

New Request Ē Cancel Direct Deposit

STEP 2: Payee Information

Last Name	First Name		Middle Initial	Title
Vendor/Contractor Business Name (if applicable)				
Address			Apartment or P.O. Bo	x Number
City		State	Zip	Country
Taxpaver ID Number	Telephone Number		Ema	L Address
	relephone Number		Lina	
Address City Taxpayer ID Number	Telephone Number	State	Apartment or P.O. Bo Zip Ema	K Number Country I Address

Authorization

- 1. I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you. 2.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient 3. fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

	Name of Bank/Institution				
lere					
check H	Account Holder Name(s)				
oided C	Saving Checking	Account Number		Routing Number	
Staple Voided Check Here	Bank Representative Printed Name		Bank Representative Signature		Date
	ACCOUNT HOLDER SIGNATURE:				Date
For SCA	For SCAQMD Use Only Input By		у	Da	te

To be Completed by your Bank

General Application Information



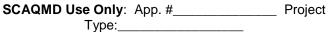
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

21865 Copley Drive, Diamond Bar, CA 91765 Off-Road Mobile Source (909) 396-2903 http://www.aqmd.gov/tao/implementation/soonprogram.htm FORM 2449-CP Revised 02/06/09

RULE 2449 FLEET COMPLIANCE PLAN

1.	COMPANY NAME:
2.	MAILING ADDRESS:
3.	CONTACT PERSON, TITLE, TELEPHONE, EMAIL:
4.	ALTERNATE CONTACT, TITLE, TELEPHONE, EMAIL:
5.	FLEET SUMMARY
	PLEASE PROVIDE DESCRIPTION OF YOUR FLEET AND TYPE OF BUSINESS IT IS IN.
	FLEET DESCRIPTION:
	# OF VEHICLES: # OF ENGINES: DOORS FLEET #
	TOTAL HORSEPOWER OF FLEET:
6.	SIGNATURE OF PERSON RESPONSIBLE FOR RULE 2449 COMPLIANCE
	I HEREBY CERTIFY, UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA, THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS COMPLIANCE PLAN IS TRUE AND CORRECT. I ALSO ACKNOWLEDGE THAT THIS PLAN IS BEING PROVIDED TO THE SCAQMD EXECUTIVE OFFICER IN COMPLIANCE WITH THE SCAQMD RULE 2449. APPROVAL OF THIS COMPLIANCE PLAN IS SUBJECT TO
	VERIFICATION OF INFORMATION SUBMITTED. I UNDERSTAND THAT SCAQMD STAFF MAY REQUIRE ADDITIONAL INFORMATION TO PROCESS THIS COMPLIANCE PLAN, AND AGREE TO PROVIDE SUCH INFORMATION.
	SIGNATURE:
	NAME:
	TITLE:
	SIGNED THIS DAY OF
	IN, CALIFORNIA

If you need assistance in preparing the compliance plan, please call the Off-Road Mobile Source Section at (909) 396-2903.





SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT SOON PROGRAM (FY 15/16)

FORM B-1 - OFF-ROAD HEAVY-DUTY EQUIPMENT REPLACEMENT

Please complete one form for each piece of equipment. For multiple unit requests, you may submit a spreadsheet that provides all requested information below, in the order presented below.

Company name/ Organization name/ Individual name:

Equipment Identifier (Unit # or Company ID):

EIN

Is the vehicle location address the same as the applicant address? \Box Yes \Box No. (please provide vehicle address below)

Street Address:

City:

Zip Code:

I. BASELINE (EXISTING) EQUIPMENT INFORMATION

Equipment Type/Function (Diesel):

(Backhoe, baler, cargo container handling unit, combine, crane, crawler tractor, crushing/processing, excavator, forklift, grader, ground support equipment, hydro-power unit, loader, mower, off-highway tractor, off-highway truck, paver, paving equipment, roller, rubber-tired dozer, rubber-tired loader, scraper, signal board, skid steer loader, sprayer, surfacing equipment, swather, tractor, tiller, trencher, or other.)

Equipment Make:	Equipment Model:
Equipment Model Year:	Equipment Serial Number or VIN:
Number of Engines on this Equipment: Main (Front) Auxiliary	

II. USAGE/ACTIVITY INFORMATION

Note: Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline equipment. You **MUST** attach documentation supporting the projected annual usage and operation within the District and within California. Supporting documentation may be in the form of maintenance records, fuel receipts, hour-meter reports, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months. Total Annual Hours of Operation: _____ or Gallons of Fuel Used: If Hours, Does the Equipment Have a Functioning Hour Meter? Yes No

Percent Operation within CA: ____% Percent Operation within District: %

Project Life: _____ years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.

III.	BASELINE ((EXISTING)	ENGINE	INFORMATION	(for each er	ngine)

Main (Front) Engine	Auxiliary (Rear) Engine	
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
Main (Front) Engine	Auxiliary (Rear) Engine	
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
Method proposed for rendering the baseline engine(s) inoperable:		

IV. NEW REPLACEMENT EQUIPMENT INFORMATION

Equipment Type/Function:	Equipment Make:		
Equipment Model:	Equipment Model Year:		
Equipment Serial Number or VIN (If available):	Number of Engines on this Equipment: Main (Front) Auxiliary (Rear)		

V. NEW REPLACEMENT EQUIPMENT ENGINE INFORMATION (for each engine)

Main (Front) Engine	Auxiliary (Rear) Engine	
Fuel Type:	New Engine Make:	
New Engine Model:	New Engine Year:	
Engine Serial No:	New Engine Horsepower:	
New Engine Tier:	New Engine Family:	
New Engine CARB Executive Order Number (Attach a copy):		
🗌 Main (Front) Engine	Auxiliary (Rear) Engine	
Fuel Type:	New Engine Make:	
New Engine Model:		
Hen Engine medel	New Engine Year:	
Engine Serial No:	New Engine Year: New Engine Horsepower:	

VI. FUNDING INFORMATION

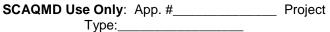
New Equipment Cost (incl. tax): \$_____

NOTE: You <u>**MUST**</u> attach a written estimate or quotation from the equipment vendor documenting the cost of the new equipment. This quote must be obtained within 90 days of prior to the closing date of the Program Announcement.

Applicant Cofunding Amount (if any): \$

Funds Requested: \$

New Equipment Vendor:





SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT SOON PROGRAM (FY 15/16)

FORM B-2 - OFF-ROAD HEAVY-DUTY EQUIPMENT **Repower Only or Repower/Retrofit**

Please complete one form for each piece of equipment. For multiple unit requests, you may submit a spreadsheet that provides all requested information below, in the order presented below.

Company name/ Organization name/ Individual name:

Equipment Identifier (Unit # or Company ID):

EIN

Is the vehicle location address the same as the applicant address? \Box Yes \Box No, (please provide vehicle address below)

Street Address:

City:

Zip Code:

I. BASELINE (EXISTING) EQUIPMENT INFORMATION

Equipment Type/Function (Diesel):

(Backhoe, baler, cargo container handling unit, combine, crane, crawler tractor, crushing/processing, excavator, forklift, grader, ground support equipment, hydro-power unit, loader, mower, off-highway tractor, off-highway truck, paver, paving equipment, roller, rubber-tired dozer, rubber-tired loader, scraper, signal board, skid steer loader, sprayer, surfacing equipment, swather, tractor, tiller, trencher, or other.)

Equipment Make:	Equipment Model:
Equipment Model Year:	Equipment Serial Number or VIN:
Number of Engines on this Equipment: Main (Front) Auxiliary	

II. USAGE/ACTIVITY INFORMATION

Note : Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline equipment. You <u>MUST</u> attach documentation supporting the projected annual usage and operation within the District and within California. Supporting documentation may be in the form of maintenance records, fuel receipts, hour-meter reports, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months.			
Total Annual Hours of Operation: <u>or</u> Gallons of Fuel Used:			
If Hours, Does the Equipment Have a Functioning Hour Meter? Yes No			
Percent Operation within CA:%	Percent Operation within District:%		
Project Life: years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.			

III. BASELINE (EXISTING) ENGINE INFORMATION (for each engine)

Main (Front) Engine	Auxiliary (Rear) Engine	
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
Main (Front) Engine	Auxiliary (Rear) Engine	
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
Method proposed for rendering the baseline engine(s) inoperable:		

IV. NEW ENGINE INFORMATION (for each engine)

Main (Front) Engine	Auxiliary (Rear) Engine
Fuel Type:	New Engine Make:
New Engine Model:	New Engine Year:
New Engine Tier:	New Engine Horsepower:
New Engine CARB Executive Order Number (Attach a copy):	New Engine Family:
🗌 Main (Front) Engine	Auxiliary (Rear) Engine
Main (Front) Engine	Auxiliary (Rear) Engine New Engine Make:
	,
Fuel Type:	New Engine Make:

V. RETROFIT INFORMATION (If Applicable)

NOTE: You <u>MUST</u> attach a copy of the ARB Executive Order for the retrofit device and indicate (circle) on the Executive Order Attachment the engine family name for the engine on which the device will be installed.

🗌 Main (Front) Engine	Auxiliary (Rear) Engine
Retrofit Device Make:	Verified NOx Reduction: %
Retrofit Device Model:	Verified PM Reduction: %
Retrofit Family Name:	Verified ROG Reduction: %
Verification Level:	
🗌 Main (Front) Engine	Auxiliary (Rear) Engine
Main (Front) Engine Retrofit Device Make:	Auxiliary (Rear) Engine Verified NOx Reduction: %
Retrofit Device Make:	Verified NOx Reduction: %

VI. FUNDING INFORMATION (ENGINE REPOWER)

Main (Front) Engine Auxiliary (Rear) Engine			
New Engine Cost (incl. tax): \$ Installation Cost: \$			
NOTE : You <u>MUST</u> attach a written estimate or quotation from the equipment vendor documenting the cost of the new engine. This quote must be obtained within 90 days of prior to the closing date of the Program Announcement.			
Applicant Cofunding Amount (if any): \$			
Applicant Grant Request Amount: \$			
New Equipment Vendor:			
Main (Front) Engine Auxiliary (Rear) Engine			
New Engine Cost (incl. tax): \$ Installation Cost: \$			
NOTE : You <u>MUST</u> attach a written estimate or quotation from the equipment vendor documenting the cost of the new engine. This quote must be obtained within 90 days of prior to the closing date of the Program Announcement.			
Applicant Cofunding Amount (if any): \$			
Applicant Grant Request Amount: \$			
New Equipment Vendor:			

VII. FUNDING INFORMATION (RETROFIT)

Main (Front) Engine Auxiliary (Rear) Engine				
Retrofit Device Cost (including tax): \$				
NOTE : You MUST attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.				
Retrofit Device Installation Cost:				
Retrofit Device Maintenance Cost:				
Applicant Grant Request: \$				
Retrofit Device Vendor and Installer:				
Main (Front) Engine Auxiliary (Rear) Engine				
Retrofit Device Cost (including tax): \$				
NOTE : You MUST attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.				
Retrofit Device Installation Cost:				
Retrofit Device Maintenance Cost:				
Applicant Grant Request: \$				
Retrofit Device Vendor and Installer:				

SCAQMD Use Only: App. #_____ Project Type:_____



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT SOON PROGRAM (FY 15/16)

FORM B-3 - OFF-ROAD HEAVY-DUTY EQUIPMENT **NOx Retrofit Only**

Please complete one form for each piece of equipment. For multiple unit requests, you may submit a spreadsheet that provides all requested information below, in the order presented below.

Company name/ Organization name/ Individual name:

Equipment Identifier (Unit # or Company ID):

EIN

Is the vehicle location address the same as the applicant address? \Box Yes \Box No. (please provide vehicle address below)

Street Address:

City:

Zip Code:

I. BASELINE (EXISTING) EQUIPMENT INFORMATION

Equipment Type/Function (Diesel):

(Backhoe, baler, cargo container handling unit, combine, crane, crawler tractor, crushing/processing, excavator, forklift, grader, ground support equipment, hydro-power unit, loader, mower, off-highway tractor, off-highway truck, paver, paving equipment, roller, rubber-tired dozer, rubber-tired loader, scraper, signal board, skid steer loader, spraver, surfacing equipment, swather, tractor, tiller, trencher, or other.)

Equipment Make:	Equipment Model:
Equipment Model Year:	Equipment Serial Number or VIN:
Number of Engines on this Equipment: Main (Front) Auxiliary	

II. USAGE/ACTIVITY INFORMATION

Note: Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline equipment. You **MUST** attach documentation supporting the projected annual usage and operation within the District and within California. Supporting documentation may be in the form of maintenance records, fuel receipts, hour-meter reports, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months.

Total Annual Hours of Operation:	<u>or</u>	Gallons of Fuel Used:	

If Hours, Does the Equipment Have a Functioning Hour Meter? Yes	No
-----------------------------------------------------------------	----

Percent Operation within CA:	%	Percent Operation within District:	%
------------------------------	---	------------------------------------	---

Project Life: _____ years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.

III. BASELINE (EXISTING) ENGINE INFORMATION (for each engine)

Main (Front) Engine	Auxiliary (Rear) Engine	
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
Main (Front) Engine	Auxiliary (Rear) Engine	
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
Method proposed for rendering the baseline engine(s) inoperable:		

IV. RETROFIT INFORMATION (for each engine)

NOTE: You <u>MUST</u> attach a copy of the ARB Executive Order for the retrofit device and indicate (circle) on the Executive Order Attachment the engine family name for the engine on which the device will be installed.

🗌 Main (Front) Engine	Auxiliary (Rear) Engine
Retrofit Device Make:	Verified NOx Reduction: %
Retrofit Device Model:	
Retrofit Family Name:	
Verification Level:	
Retrofit Device Serial #:	
Main (Front) Engine	Auxiliary (Rear) Engine
Retrofit Device Make:	
Retrofit Device Model:	
Retrofit Family Name:	
Verification Level:	
Retrofit Device Serial #:	

V. FUNDING INFORMATION

🗌 Main (Front) Engine	Auxiliary (Rear) Engine
Retrofit Device Cost (including tax): \$	
NOTE : You MUST attach a written estimate from the equ quote must be obtained within 90 days prior to the closin	
Retrofit Device Installation Cost:	
Retrofit Device Maintenance Cost:	
Applicant Grant Request: \$	
Retrofit Device Vendor and Installer:	
🗌 Main (Front) Engine	Auxiliary (Rear) Engine
Retrofit Device Cost (including tax): \$	
NOTE : You MUST attach a written estimate from the equ quote must be obtained within 90 days prior to the closin	
Retrofit Device Installation Cost:	
Retrofit Device Maintenance Cost:	
Applicant Grant Request: \$	
Retrofit Device Vendor and Installer:	

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Rule 2449 - SOON Program Administrative Guidelines

February 2016

Deputy Executive Officer

Science and Technology Advancement Matt Miyasato, Ph.D.

Assistant Deputy Executive Officer

Science and Technology Advancement Mobile Source Division Henry Hogo

Program Supervisor Science and Technology Advancement Mobile Source Division – Off-Road Section Adewale Oshinuga

Air Quality Specialist Science and Technology Advancement Mobile Source Division – Off-Road Section Richard Carlson

RULE 2449 – SOON PROGRAM ADMINISTRATIVE GUIDELINES

INTRODUCTION

Title 13, Section 2449 of the California Code of Regulation (CCR), "Emission Standards for In-Use Off-Road Diesel-Fueled Fleets," was adopted by the California Air Resources Board (CARB) in July 2007. The regulation requires off-road diesel vehicle fleets to meet increasingly more stringent NOx and PM fleet average standards beginning in 2010 to achieve NOx and PM2.5 reductions. A provision of this rule (Title 13, CCR, Section 2449.2) allows air districts to opt-in and require the largest fleets to apply for funds to meet more stringent NOx targets, thereby achieving additional NOx reductions earlier. Emission reductions achieved must be surplus to those required from the statewide regulation (Title 13, CCR, Section 2449.1).

The opt-in provision is also known as the Surplus Off-road Opt-in for NOx (SOON) program. If an air district formally opts-in to the SOON program, it is required to develop administrative and funding guidelines that outline additional provisions beyond existing guidelines such as the Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) necessary to implement the SOON program. Pursuant to Section 2449.2(e)(7), any funding awards must be consistent with the Carl Moyer Program. The South Coast Air Quality Management District (SCAQMD) has adopted specific policies and procedures to implement the Carl Moyer Program. The policies and procedures to implement the Carl Moyer Program will serve as the basis for the SOON program. Additional administrative or funding guidelines must be developed to implement the SOON Program. At a minimum, the additional guidelines must include project selection criteria, co-funding requirements, and reporting and monitoring requirements.

Rule 2449 – Control of Oxides of Nitrogen Emissions from Off-Road Diesel Vehicles, incorporates by reference Title 13, CCR, Section 2449.2. The following sets forth additional guidelines as required under Title 13, CCR, Section 2449.2 (f)(2). These guidelines will be reviewed, at a minimum, on an annual basis, and may be updated to reflect the most recent applicable Carl Moyer guidelines or other administrative or funding guidelines approved by the District Governing Board.

GUIDELINES

The guidelines described below are proposed to be in addition to the most current Policies and Procedures for the Carl Moyer Program adopted by the SCAQMD Governing Board. Any fleet that operates off-road diesel vehicles in the SCAQMD that are subject to Title 13, CCR, Section 2449.2(b) must, after April 2, 2009, apply for funding for those off-road vehicles operating a majority of the time in the SCAQMD, and the emission reductions must be surplus to the provisions of Sections 2449.1, Title 13, CCR.

A. Vehicle Qualification / Eligibility in SOON Fleet

Pursuant to Title 13, CCR, Section 2449.2(b)(2), a fleet is subject to the SOON requirements if it consists of more than 40 percent of Tier 0 and Tier 1 vehicles statewide as of January 1, 2008, and operates individual vehicles within the district.

 Percentage of fleet that is Tier 0 and Tier 1 is based on vehicle number and not horsepower. However, calculation of the SOON NOx index and SOON NOx targets in section 2449.2 (d)(1)(B) and 2449.2 (d)(1)(C) will be based on each engine. For example if a vehicle has two engines then the NOx Index and NOx target calculations will be determined using each engine separately and not as the total horsepower combined.

Operated within the district is defined [Title 13, CCR, Section 2449.2(c)(2)] as a vehicle that currently operates in the district and for the three years immediately preceding the SCAQMD SOON program announcement deadline, operated more than 100 hours annually, and operated more hours within the boundaries of the SCAQMD than any other air district

- 2. t.
- *Currently operates* is defined as having operated or will operate in the SCAQMD during the year immediately preceding the active SOON program announcement deadline.
- Operated more hours within the SCAQMD's boundaries than in any other district means that the total number of hours operated in the AQMD's boundaries in the three years immediately preceding the active SOON program announcement deadline are greater than the total hours operated over the same timeframe within any other single district's boundaries.
- 3. Pursuant to Section 2449.2(d)(2) fleets with a statewide maximum horsepower (hp) less than or equal to 20,000 (hp) are not subject to the SOON provisions, but may apply for SOON funding if they do not meet the SOOn NOx targets.
- 4. Pursuant to Section 2449.2 (e)(8), fleets with vehicles that qualify for inclusion in the SOON program but are planning to move vehicles out of the SCAQMD such that the vehicles will not operate enough hours in the SCAQMD to qualify for SOON funding, are not required to include such vehicles in meeting the NOx index calculation in Section 2449.2 (d)(1)(B), the NOx target rate calculation in Section 2449.2 (d)(1)(C), and the application for funding requirements of the SOON program. The vehicle must meet all requirements of Section 2449.2 (e)(8) to qualify for this provision.
- 5. If a fleet has a vehicle that has been retrofitted within the last six years with a Level 2 or 3 VDECS, which was the highest level VDECS at the time of retrofit, the fleet may but is not required to apply for SOON funding for that vehicle.

B. Compliance Plan Requirements

Title 13, CCR, Section 2449.2(e)(3), requires fleets applying for SOON funding to submit a compliance plan in addition to their application. The compliance plan must describe actions the fleet must take to meet the fleet average and BACT requirements of the statewide regulation (Title 13, CCR, Section 2449.1)and actions to meet the more stringent SOON NOx fleet targets. SCAQMD would review and provide its initial approval within 45 days after a plan is deemed complete. (CARB has a separate approval process, which the SCAQMD would work with CARB to obtain CARB's approval in a timely manner.) Information that must be submitted as part of the compliance plan includes:

1. Fleet Information –

- a. Information required as part of Title 13, CCR, Section 2449(g)(1)(B), for each vehicle and includes:
 - Vehicle type;
 - Vehicle manufacturer;
 - Vehicle model;
 - Vehicle model year;
 - Vehicle serial number;
 - If vehicle is permanent or year-by-year low use, specialty, dedicated emergency, dedicated snow removal, or is used for agricultural operations for over half of its annual operating hours;
 - For each engine that propels the vehicle, the engine manufacturer, USEPA certified engine family (if any), engine serial number, engine model year and/or production year, engine maximum horsepower (net horsepower, or net flywheel horsepower as certified by the Society of Automotive Engineers (SAE), or if this is not readily available, a horsepower on the label of the engine, or in the service literature for the engine can be used), or estimate the horsepower by multiplying the power take off by 120 percent, type of retrofit emission control (if any), date installed, and its verification level.
 - Whether the vehicle has been retrofit, repowered, or replaced with SOON funding, and if so, the start and end of dates of the contract period.
- b. Information necessary to demonstrate eligibility for vehicles subject to SCAQMD SOON provisions:
 - Percentage of Tier 0 and Tier 1 equipment as of January 1, 2008
 - Total fleet horsepower subject to CARB regulation
 - \circ Vehicle operational time and location for past three (3) years
 - Whether the vehicle is scheduled to leave the SCAQMD, and if so, the appropriate statement under penalty of perjury stating the fleet's intent to move the vehicle out of the SCAQMD.
- c. If credit will be taken for early repowers, retirements, or retrofits for the purpose of complying with the statewide rule, fleet information must be submitted from the year of the earliest action to the current year for all vehicles used to generate the early credits.

2. Fleet Actions –

Sufficient information must be supplied in the compliance plan detailing actions planned or taken on each piece of equipment in a fleet to meet the statewide requirements as well as the actions necessary to meet the SOON NOx targets. As the SOON NOx targets are set for every 3 years (2011, 2014, 2017, 2020, 2023), additional actions taken each year from the current year to the next two future applicable SOON NOx target date must be identified (e.g., if the compliance plan is being prepared for the year 2008, the plan must cover years through 2014). If credit will be taken for early repowers, retirements, or retrofits, fleet actions taken before the current year must be submitted for all vehicles used to generate the early credits. Information must include for each year and each vehicle:

- Action taken retire, replace, repower, or retrofit
- For replacement, all information listed in Section 2449 (g)(1)(B) for the new vehicle
- For repower, information about the new engine including engine manufacturer, engine family (if any), engine serial number, engine model year, engine maximum power, type of retrofit emission control equipment installed (if any), date installed and its verification level.
- For retrofit, type of retrofit emission control equipment, and verification level.

C. SOON Application Requirements

1. Application -

Pursuant to Section 2449.2(d)(1)(D) a fleet must apply for sufficient funding to repower, replace, or retrofit vehicles so that the SOON portion of the fleet (all vehicles in the fleet that operated within the district) will meet or exceed the applicable fleet NOx target if all projects were funded. The application and all necessary information needed as part of the application are explained in the program announcement. Information required includes:

- Contact information
- Vehicle information (make, model, model year, etc.)
- Project life (ranges3 to 10years)
- Project type
- Vehicle activity information (i.e. fuel usage, hours of operation)
- Cost information (including vendor quotes)

2. High Priority Request -

Pursuant to Title 13, CCR, Section 2449.2 (d)(1)(D), fleets must designate for each SOON program project application whether they wish the project to receive high priority for funding.

3. Annual Hours of Operation -

A project's annual hours of operation will be equal to the average of the operating hours in the SCAQMD over the two years immediately preceding the active SOON program announcement deadline. The hours the vehicle operated in the SCAQMD

will be used to calculate the project cost effectiveness as well as the subsequent requirement of minimum operating time in the district should the project receive funding. For example, should a vehicle operate on average for the past three years 400 hours each in two other air districts and 500 hours in the SCAQMD that vehicle would qualify for the SCAQMD SOON program, but only for the 500 hours it averages in the SCAQMD. The vehicles cost-effectiveness would be evaluated on the 500 hours, and should the vehicle receive funding, it would be required to operate on the average, 70% of its 500 hours or 350 hours annually in the SCAQMD for the life of the project.

D. Operational Requirements

1. Contract duration –

Minimum contract duration or project life ranges between three (3) to ten (10) years unless otherwise noted in the program announcement.

E. Project Award

The first 75% of the available funding will be awarded strictly on cost-effectiveness criteria. A \$5,000 per ton of NOx reduced cost-effectiveness value will be used as the benchmark. Most projects are expected to be below this benchmark (i.e. will be more cost-effective). However, projects at higher cost-effectiveness values can still be funded as long as they are below the cost-effectiveness cap mandated by the applicable Moyer Guidelines. The remaining 25% will be distributed to the most cost-effective project presented by each fleet with the goal of funding at least one project per fleet. The funding will be distributed beginning with the most cost-effective projects presented by a fleet not having received funding in the first round and requesting high priority for the projects until the 25% of the funding is all awarded. If funding is still available after all fleets have at least one project funded, the remaining funds will go to the next most cost-effective projects available from all of the fleets. At no time will a fleet receive more than 10% of the available SOON funding. All other criteria being equal, projects greater than 250 horsepower will receive funding before projects less than 250 horsepower.

F. Co-funding

Most SOON projects are expected to be repowers to Tier 3 engines or cleaner. SOON repower projects will be funded at the full incremental cost of the repower which will require the project owner to co-fund 15% of the cost of the repower with the SOON program providing 85% of the repower costs. The exception to this requirement is where it could reasonably be determined that the fleet would not have incurred the rebuild cost (e.g. the replaced engine was recently rebuilt). For the purpose of this provision, a rebuild refers to a rebuild of an engine or engine system, including a major overhaul in which you replace the engine's pistons or

power assemblies or make other changes that significantly increase the service life of the engine. It may also include replacing or rebuilding an engine's turbocharger or after cooler or the engine's systems for fuel metering or electronic control so to significantly increase the service life of the engine. The following maintenance does not constitute a rebuild:

- (1) Scheduled emission-related maintenance during the useful life period (such as replacing fuel injectors).
- (2) Unscheduled maintenance that occurs commonly within the useful life period. For example, replacing a water pump is not rebuilding an engine.

If the engine rebuild was completed in the 12 months prior to the contract date, the grantee must provide the SCAQMD with documentation of the rebuild to qualify for this provision. Rebuild documentation may include, but is not be limited to, dated work orders, sale invoices for parts, and/or maintenance records. For engine rebuilds completed in the 13 to 36 months prior to the contract date, the grantee must provide the SCAQMD with documentation of the rebuild and documentation that grantee's normal business practice is to rebuild to qualify for this provision. Documentation for extended rebuild intervals includes, but is not limited to, historical maintenance records for the equipment or fleet policy on rebuild intervals. Engine rebuilds completed more than 36 months prior to contract date are not considered "recent" and do not qualify for this provision.

G. Vehicle Replacement

The maximum funding amount for eligible SOON replacement projects shall be the same as the funding level provided in the most recent CARB approved version of the Carl Moyer Guidelines for off-road equipment replacement projects.



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 23

REPORT: Lead Agency Projects and Environmental Documents Received By SCAQMD

SYNOPSIS:This report provides, for the Board's consideration, a listing of
CEQA documents received by the SCAQMD between January 1,
2016 and January 31, 2016, and those projects for which the
SCAQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, February 19, 2016, Reviewed

RECOMMENDED ACTION: Receive and file.

Barry R. Wallerstein, D.Env. Executive Officer

PF:JW:IM:JW:AK

CEQA Document Receipt and Review Logs (Attachments A and B) – Each month, the SCAQMD receives numerous CEQA documents from other public agencies on projects that could adversely affect air quality. A listing of all documents received and reviewed during the reporting period of January 1, 2016 and January 31, 2016 is included in Attachment A. A list of active projects from previous reporting periods for which SCAQMD staff is continuing to evaluate or has prepared comments is included in Attachment B.

The Intergovernmental Review function, which consists of reviewing and commenting on the adequacy of the air quality analysis in CEQA documents prepared by other lead agencies, is consistent with the Board's 1997 Environmental Justice Guiding Principles and Environmental Justice Initiative #4. Furthermore, as required by the Environmental Justice Program Enhancements for FY 2002-03 approved by the Board in October 2002, each of the attachments notes those proposed projects where the SCAQMD has been contacted regarding potential air quality-related environmental justice concerns. The SCAQMD has established an internal central contact to receive information on projects with potential air quality-related environmental justice concerns. The public may contact the SCAQMD about projects of concern by the following means: in writing via fax, email, or standard letters; through telephone communication; as part of oral comments at SCAQMD meetings or other meetings where SCAQMD staff is present; or by submitting newspaper articles. The attachments also identify for each project the dates of the public comment period and the public hearing date, if applicable, as reported at the time the CEQA document is received by the SCAQMD. Interested parties should rely on the lead agencies themselves for definitive information regarding public comment periods and hearings as these dates are occasionally modified by the lead agency.

At the January 6, 2006 Board meeting, the Board approved the Workplan for the Chairman's Clean Port Initiatives. One action item of the Chairman's Initiatives was to prepare a monthly report describing CEQA documents for projects related to goods movement and to make full use of the process to ensure the air quality impacts of such projects are thoroughly mitigated. In response to describing goods movement, CEQA documents (Attachments A and B) are organized to group projects of interest into the following categories: goods movement projects; schools; landfills and wastewater projects; airports; and general land use projects, etc. In response to the mitigation component, guidance information on mitigation measures were compiled into a series of tables relative to: off-road engines; on-road engines; harbor craft; ocean-going vessels; locomotives; fugitive dust; and greenhouse gases. These mitigation measure tables are on the CEQA webpages portion of the SCAQMD's website. Staff will continue compiling tables of mitigation measures for other emission sources, including airport ground support equipment, etc.

As resources permit, staff focuses on reviewing and preparing comments for projects: where the SCAQMD is a responsible agency; that may have significant adverse regional air quality impacts (e.g., special event centers, landfills, goods movement, etc.); that may have localized or toxic air quality impacts (e.g., warehouse and distribution centers); where environmental justice concerns have been raised; and those projects for which a lead or responsible agency has specifically requested SCAQMD review. If the SCAQMD staff provided written comments to the lead agency as noted in the column "Comment Status," there is a link to the "SCAQMD Letter" under the Project Description. In addition, if the SCAQMD staff testified at a hearing for the proposed project, a notation is provided under the "Comment Status." If there is no notation, then SCAQMD staff did not provide testimony at a hearing for the proposed project. During the period January 1, 2016 through January 31, 2016, the SCAQMD received 58 CEQA documents. Of the total of 72 documents* listed in Attachments A and B:

- 19 comment letters were sent;
- 11 documents were reviewed, but no comments were made;
- 27 documents are currently under review;
- 1 documents did not require comments (e.g., public notices, plot plans, Final Environmental Impact Reports);
- 0 documents were not reviewed; and
- 14 documents were screened without additional review.

* These statistics are from January 1, 2016 to January 31, 2016 and may not include the most recent "Comment Status" updates in Attachments A and B.

Copies of all comment letters sent to lead agencies can be found on the SCAQMD's CEQA webpage at the following internet address: http://www.aqmd.gov/home/regulations/ceqa/commenting-agency.

SCAQMD Lead Agency Projects (Attachment C) – Pursuant to CEQA, the SCAQMD periodically acts as lead agency for stationary source permit projects. Under CEQA, the lead agency is responsible for determining the type of CEQA document to be prepared if the proposal is considered to be a "project" as defined by CEQA. For example, an Environmental Impact Report (EIR) is prepared when the SCAQMD, as lead agency, finds substantial evidence that the proposed project may have significant adverse effects on the environment. Similarly, a Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the SCAQMD determines that the proposed project will not generate significant adverse environmental impacts, or the impacts can be mitigated to less than significance. The ND and MND are written statements describing the reasons why proposed projects will not have a significant adverse effect on the environment and, therefore, do not require the preparation of an EIR.

Attachment C to this report summarizes the active projects for which the SCAQMD is lead agency and is currently preparing or has prepared environmental documentation. As noted in Attachment C, the SCAQMD continued working on the CEQA documents for four active projects during January.

Attachments

- A. Incoming CEQA Documents Log
- B. Ongoing Active Projects for Which SCAQMD Has or Will Conduct a CEQA Review
- C. Active SCAQMD Lead Agency Projects

	0111(011111,2010 I)	JANUARI 31, 2010			
SCAQMD LOG-IN NUMBER	PROJECT DESCRI	PTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
PROJECT TITLE			DOC.		STATUS
Goods Movement LAC160105-02 Deep Draft Navigation Project	The proposed project consists of: deepen the secondary a construct a turning basin in the secondary access channe approach channel, or deepen the anchorage along the matuses of dredged material for recreation or ecosystem rest	el to Pier T West Basin, deepen the ain channel, and investigate beneficial	Draft Environmental Impact Statement	Port of Long Beach	Under review, may submit written comments
	Comment Period: N/A	Public Hearing: N/A			
Warehouse & Distribution Centers	The proposed project consists of the construction of two		Draft Mitigated	City of Carson	SCAQMD
LAC160112-06 Prologis (DOR No. 1597-15, SP No. 14- 15 an Amendment to SP-1, and TPM No. 100000-15	warehouse buildings on 21.13 acres located at the south Wilmington Avenue. Building 1 is proposed to be 123, feet on the ground level and an additional 10,000 square 20,000 square feet of office space on a 6.14-acre site.	490 total square feet, with 10,000 square	Negative Declaration		staff commented 2/5/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letter	rs/2016/february/mnddominguez.pdf			
	Comment Period: 1/6/2016 - 2/5/2016	Public Hearing: N/A			
Industrial and Commercial RVC150106-02 Robertson's Quarry Reclamation Plan, General Plan Amendment, and Change of Zone	The proposed project consists of consolidation of two p into a revised and updated Reclamation Plan; land use a activities on the unpermitted area; as well as a revision a approved for the balance of the project site. The project the east, the San Gorgonio River to the north, by both E Road to the south, and North Durward Street to the wes <u>http://www.aqmd.gov/docs/default-source/ceqa/comment-letter</u>	approval for the continuation of mining and update to previous reclamation plans t is bounded by North Hathaway Street to ast Theodore Street and East Repplier t. sy/2016/january/noprobertson.pdf	Notice of Preparation	City of Banning	SCAQMD staff commented 1/12/2016
Industrial and Commercial	Comment Period: 1/6/2016 - 2/1/2016	Public Hearing: 2/1/2016	Draft	City of Laka	Duananina
SBC160112-05 Nichols Canyon Mine (Amendment No. 2 to Reclamation Plan 2006-01A1 and Surface Mining Permit No. 2015-01)	The proposed project consists of amending an existing r mining activities by approximately 24 acres; reducing th 4,000,000 tons per day to 1,000,000 tons per day; revisi revegetation plan; and extending the hours permitted for and adjacent to Interstate 15, both north and south of Ni	he annual tonnage limit for the mine from ing the approved seed mix and r mining. The project is located east of	Dratt Environmental Impact Report	City of Lake Elsinore	Preparing written comments
	Comment Period: 1/8/2016 - 2/22/2016	Public Hearing: N/A			

*Sorted by Land Use Type (in order of land uses most commonly associated with air quality impacts), followed by County, then date received.

- Project has potential environmental justice concerns due to the nature and/or location of the project.

	JANUAKY 1, 2010 IU JANUAKY 51, 2010			
<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Industrial and Commercial SBC160119-05 Environmental Assessment Review No. 15-24, Precise Plan of Design Nos. 2393 & 2394	The proposed project consists of the construction and operation of an expanded FedEx Ground Package distribution facility at 330 W. Resources Drive. The facility will be expanded by 119,796-square-feet.	Draft Mitigated Negative Declaration	City of Rialto	Document reviewed - No comments
Waste and Water-related	Comment Period: 1/20/2016 - 2/8/2016 Public Hearing: N/A The proposed project consists of developing a new entrance and support facilities; better utilize	Initial Project	County of Los	Document
LAC160108-01 Chiquita Canyon Landfill	The proposed project consists of developing a new entrance and support facilities; better utilize the landfill's potential disposal capacity through a lateral extension of the new waste footprint and increased maximum elevation; increased daily disposal limit; acceptance of all nonhazardous waste permitted at a Class III solid waste disposal landfill; continued operation of the landfill; new design features; environmental monitoring; development of a Household Hazardous Waste Facility; mixed organics composting operation; and set-aside of land for potential future conversion technology. In addition, the project includes renovating a portion of Southern California Edison's existing Saugus-Elizabeth Lake-Fillmore 66 kilovolt Subtransmision Line in order to accommodate landfill improvements. The project is located in unincorporated Los Angeles County, near Santa Clarita. Reference LAC140709-01 Comment Period: N/A Public Hearing: N/A	Consultation	Angeles	reviewed - No comments
Waste and Water-related LAC160113-03 Pacoima Spreading Grounds Improvement Project	The proposed project consists of several improvements to the existing facilities to increase the water holding capacity from 530 acre-feet (af) to 1,197 af; increase the percolation rate from 65 cubic feet per second (cfs) to 142 cfs; eliminate localized flooding on Arleta Avenue; and improve the efficiency of operations and maintenance. Approximately 1.6 million cubic yards of sediment would be excavated from the pits. The project is located at the intersection of Paxton Street and Arlete Avenue. Comment Period: 1/11/2016 - 2/25/2016 Public Hearing: 1/28/2016	Draft Mitigated Negative Declaration	County of Los Angeles	Under review, may submit written comments
Waste and Water-related LAC160119-04 Las Virgenes-Triunfo Joint Powers Authority Woodland Hills Water Recycling Project	The proposed project consists of constructing approximately five miles of recycled water pipeline to serve 477 acre-feet per year of recycled water to customers within the Joint Powers Authority service area and the service area of Los Angeles Department of Water and Power. The project is located in the community of Woodland Hills.	Notice of Availability of a Draft Mitigated Negative Declaration	Las Virgenes Water District	Document reviewed - No comments
	Comment Period: 1/19/2016 - 2/19/2016 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF	LEAD AGENCY	COMMENT
PROJECT TITLE		DOC.		STATUS
Waste and Water-related ORC160113-02 Draft Chemical Removal Action Workplan Former Dry Cleaner, Santa Ana	The proposed project consists of a Removal Action Workplan to clean up chemical contamination in soil, originating from a former dry cleaner, located at the corner of 17th Street and 1329 N. Tustin Avenue in Santa Ana.	Community Notice	Department of Toxic Substances Control	Document reviewed - No comments
	Comment Period: 1/14/2016 - 2/16/2016 Public Hearing: N/A			
Waste and Water-related ORC160120-01 Santa Ana River Interceptor Rock Removal Project	The proposed project consists of removing rock material from the Santa Ana River channel downstream of the Green River Golf Club. After removal work is completed, a temporary access road that led to past manholes would be scarified and hydro-seeded with a native plant mix approved by the resource agencies to facilitate re-growth of vegetation. The project is located along the Santa Ana River, from the Green River Golf Club downstream to the Savi Ranch Shopping Center.	Notice of Availability of a Draft Mitigated Negative Declaration	Orange County Sanitation District	Document reviewed - No comments
	Comment Period: 1/19/2016 - 2/19/2016 Public Hearing: N/A			
Utilities LAC160113-01 Los Angeles Regional Interoperable Communications System Land Mobile Radio Project	The proposed project consists of operating up to 90 Land Mobile Radio (LMR) facilities at sites located primarily in Los Angeles County. The LMR sites would contain the infrastructure and equipment necessary to provide voice communications coverage throughout the County for emergency responders.	Draft Environmental Impact Report	Los Angeles Regional Interoperable Communications System Joint Powers Authority	Preparing written comments
	Comment Period: 1/13/2016 - 2/25/2016 Public Hearing: 1/12/2016			
<i>Utilities</i> ORC160105-09 Transpacific Fiber-Optic Cables Project	The proposed project consists of the installation and operation of up to four transpacific submarine cable systems, which would connect the United States to various Pacific Rim locations. The project would include marine directional bores, beach manholes, buried conduit systems, power feed equipment facilities, fiber optic cables, ocean ground beds, and other ancillary components. The project is located west of 25th Street and on the beach just west of Neptune Street.	Draft Environmental Impact Report	City of Hermosa Beach	Document reviewed - No comments
	Comment Period: 1/4/2016 - 2/17/2016 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

	JAINUARI 1, 2010 TO JAINUARI 51, 2010			
SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
PROJECT TITLE		DOC.		STATUS
Transportation	The proposed project consists of a new underground light rail system project that would be less	Final	Los Angeles	Document
LAC160105-03	than two miles and would have three new stations. The project is bounded by U.S. Highway 101	Supplemental	County	reviewed -
Regional Connector Transit Corridor	on the north, 7th Street on the south, Alameda Street on the east, and State Route 110 on the	Environmental	Metropolitan	No
Project	west. Reference LAC150612-01	Impact Report	Transportation Authority	comments
	Reference LAC130012-01		Authority	
	Comment Period: N/A Public Hearing: N/A			
Transportation	The proposed project consists of the replacement of the Trancas Creek Bridge. The project is	Initial Project	California	SCAQMD
LAC160113-04	located on State Route 1 in the City of Malibu.	Consultation	Department of	staff
Trancas Creek Bridge Replacement			Transportation	commented 1/20/2016
Project				1/20/2010
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/noptrancas.pdf			
	Comment Period: 1/15/2016 - 2/27/2016 Public Hearing: 1/27/2016			
Transportation	The proposed project consists of construction of an elevated off-ramp structure on northbound	Notice of	California	Under
LAC160126-04	Interstate 110 between the 30th Street and Figueroa Street Overcrossing, in the city of Los	Availability of a	Department of	review, may
I-110 High-Occupancy Toll Lane	Angeles.	Draft Environmental	Transportation	submit written
Flyover Project, Adams Blvd to		Assessment		comments
Figueroa Way				
	Comment Period: 1/26/2016 - 3/21/2016 Public Hearing: 2/23/2016			
Transportation	The proposed project consists of a comprehensive program to design and construct projects	Draft Program	Metropolitan Water	Under
SBC160113-06	addressing surface infrastructure repair and protection needs, while simultaneously implementing	Environmental	District	review, may
Orange County Distribution System	a plan for conducting routine operations and maintenance activities in the Orange County Operating Region in order to ensure continued water supply reliability. The project is located	Impact Report		submit written
Infrastructure Protection Program	within a small portion of San Bernardino County where the Lower Feeder pipeline is within the			comments
	boundary of Chino Hills State Park.			comments
	Comment Period: 1/13/2016 - 2/19/2016 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

	JANUARY 1, 2016 10 JANUARY 31, 2016			
SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF	LEAD AGENCY	COMMENT
PROJECT TITLE		DOC.		STATUS
Institutional (schools, government, etc.)	The proposed project consists of addressing new planning elements not previously included in the	Notice of	Mt. San Antonio	SCAQMD
LAC160115-01 Mt. San Antonio College 2015 Facilities Master Plan Update and Physical Education Projects	2012 Facility Master Plan. The project is located on Grand Avenue and Temple Avenue in the City of Walnut.	Preparation	College	staff commented 1/20/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/nopmtsac.pdf			
	Comment Period: 1/15/2016 - 2/14/2015 Public Hearing: N/A			
Institutional (schools, government, etc.)	The proposed project consists of development of the West Valley Campus on approximately	Draft Program	Desert Community	Under
LAC160122-03 West Valley Campus Master Plan & Phase 1 Project	29.11 acres located in the heart of the City of Palm Springs in western Coachella Valley area. The project would include demolition of the existing Palm Springs Mall.	Environmental Impact Report	College District	review, may submit written comments
	Comment Period: 1/22/2016 - 3/8/2016 Public Hearing: N/A			
Institutional (schools, government, etc.)	The proposed project consists of the construction and operation of a 16-acre K-8 school and 4-	Draft Negative		Document
ORC160113-05 Esencia K-8 School	acre shared/joint use facilities. The project is located in Subarea 2.1 of the Ranch Plan in Rancho Mission Viejo.	Declaration	School District	reviewed - No comments
	Comment Period: 1/12/2016 - 2/11/2016 Public Hearing: N/A			
Institutional (schools, government, etc.) RVC160122-04 Southwest Justice Center Courts Relocations Project	The proposed project consists of construction and operation of a 14,333-square-foot building and execution of necessary agreements facilitating the addition of two juvenile courts and ancillary office spaces as well as additional surface parking areas, access roads, and walkways. The project is located at 30755 Auld Road in the unincorporated parts of French Valley.	Draft Mitigated Negative Declaration	County of Riverside	Document reviewed - No comments
	Comment Period: 1/23/2016 - 2/11/2016 Public Hearing: N/A			
Medical Facility	The proposed project consists of tenant improvements to convert the existing office building and	Notice of	City of Santa Clarita	
LAC160105-06 Kaiser Permanente Medical Office Building Project	research and development building into medical offices. The project is located at 26877 Tourney Road.	Availability of a Draft Mitigated Negative Declaration		reviewed - No comments
	Comment Period: 12/29/2015 - 1/19/2016 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF	LEAD AGENCY	COMMENT
PROJECT TITLE		DOC.		STATUS
Medical Facility LAC160105-07 Huntington Memorial Hospital Master Plan Amendment Project	The proposed project consists of amending its 20-year Master Plan to reconfigure its physical boundaries, and rehabilitate existing facilities, in order to meet State seismic requirements for acute-care facilities and to ensure the uninterrupted provision of safe, efficient medical care. The project is located at 100 W. California Boulevard.	Draft Environmental Impact Report	City of Pasadena	Document reviewed - No comments
	Comment Period: 1/5/2016 - 2/19/2016 Public Hearing: N/A			
Retail LAC160119-03 14-SPR-003, 14-OTP-016, 14-VAR- 003, 14-SP-040, & VTPM 73266	The proposed project consists of the construction of a new 45,000-square-foot, two-story fitness facility building and a 4,000-square-foot, one-story retail/fast service restaurant building on a vacant site. The project is located at 29431 & 29439 Agoura Road.	Notice of a Public Hearing and Availability of Draft MND	City of Agoura Hills	Document reviewed - No comments
	Comment Period: N/A Public Hearing: 1/27/2016			
Retail LAC160129-01 Pomona Hyatt Place Hotel Project	The proposed project consists of a six-story, 200-room Hyatt Place/Hyatt House Hotel with conference facilities and supporting amenities totaling approximately 159,000 square feet; and a free-standing, three-story office building totaling approximately 75,000 square feet. The project is located on 14.88 acres near Rio Rancho Road and the 71 Freeway. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/february/noppomonahyatt.pdf	Notice of Preparation	City of Pomona	SCAQMD staff commented 2/2/2016
	Comment Period: 1/29/2016 - 2/29/2016 Public Hearing: N/A			
Retail RVC160106-01 MA15187	The proposed project consists of constructing a gas station, drive-thru automated car wash; convenience store with attached retail space. The project is located at 9306 Jurupa Road. <u>http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/nop15187.pdf</u>	Initial Project Consultation	City of Jurupa Valley	SCAQMD staff commented 1/19/2016
	Comment Period: 1/6/2016 - 1/22/2016 Public Hearing: N/A			
Retail RVC160119-02 MA15192	The proposed project consists of subdividing a 4.43-acre parcel into three parcels for a proposed 3,000-square-foot drive-thru restaurant; a 21,600-square-foot retail/restaurant building; and an Arco Gas Station canopy, convenience store and drive-thru car was. The project is located on the southwest corner of Mission Boulevard and Pyrite Street. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/february/nopsecmissionpyrite.pdf	Initial Project Consultation	City of Jurupa Valley	SCAQMD staff commented 2/2/2016
	Comment Period: 1/19/2016 - 2/15/2016 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

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SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	DOC.	LEAD AGENCY	COMMENT STATUS
PROJECT TITLE				
General Land Use (residential, etc.) LAC150107-01 Mission Place Project	The proposed project consists of developing a 1.27-acre surface parking lot with a three-story, 85,775-square-foot mixed-use project comprising two new buildings. In total, the project proposes 91 multi-family residential units, 7,000 square feet of ground floor commercial space, and 228 parking spaces in three levels of underground parking. The project is located at 1020 El Centro Street.	Draft Environmental Impact Report	City of South Pasadena	Document reviewed - No comments
	Comment Period: 1/5/2016 - 2/19/2016 Public Hearing: 1/12/2016			
General Land Use (residential, etc.) LAC160119-01 6200 West Sunset Boulevard	The proposed project consists of developing a mixed-use project that would provide 270 residential units, approximately 12,420 square feet of neighborhood-serving commercial retail and restaurant uses, and a minimum of 361 vehicle parking spaces in the Hollywood Community of the City of Los Angeles. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/nop6200wsunset.pdf Comment Period: 1/19/2015 - 2/18/2016 Public Hearing: N/A	Notice of Preparation	City of Los Angeles	SCAQMD staff commented 1/28/2016
General Land Use (residential, etc.)	The proposed project consists of replacing the existing commercial uses on the project site with a	Notice of	City of Los Angeles	SCAQMD
LAC160126-03 333 La Cienega Boulevard Project	 new mixed-use, 20-story building consisting of 145 residential units and 31,055 square feet of commercial uses, including 3,370 square feet for a proposed restaurant and 27,685 square feet for commercial retail uses. The new structure would be 294,294 square feet. http://www.aqmd.gov/docs/default-source/cega/comment-letters/2016/january/nop333lacien.pdf 	Preparation		staff commented 1/28/2016
	Comment Period: 1/26/2016 - 2/25/2016 Public Hearing: N/A			
General Land Use (residential, etc.) LAC160127-01 6250 Sunset Project	The proposed project consists of developing the 6250 Sunset Project on an approximately 2.06- acre site. The project would retain the Earl Carrol Theatre and construct a new seven-story mixed- use building. The new building will have approximately 179,397 square feet of commercial and residential space. Reference LAC150327-02	Final Environmental Impact Report	City of Los Angeles	Document reviewed - No comments
	Comment Period: N/A Public Hearing: N/A		City of Los Averales	Demment
General Land Use (residential, etc.) LAC160129-02 Baldwin Hills Crenshaw Plaza Master Plan Project	The proposed project consists of redeveloping the existing Baldwin Hills Crenshaw Plaza, which will result in a mixed-use retail, commercial, office, hotel, and residential project totaling approximately 3,072,956 square feet of net floor area. Approximately 77,933 square feet of the existing free-standing structures will be demolished, and all of the enclosed mall structure and cinema would be retained. The project is bordered by 39th Street on the north, Crenshaw Boulevard on the east, Stocker Street on the south, and Santa Rosalia Drive and Marlton Avenue on the west. Reference LAC141219-03	Revised Draft Environmental Impact Report	City of Los Angeles	Document reviewed - No comments
	Comment Period: 1/28/2016 - 3/14/2016 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF	LEAD AGENCY	COMMENT
PROJECT TITLE		DOC.		STATUS
General Land Use (residential, etc.) ORC160105-05 Olson Manchester Townhomes	The proposed project consists of demolition of an existing 144-space RV Park and the construction of a 120-unit, gated, three-story townhome community that includes a community recreational area and several smaller common areas. The project is located at 2337-2415 South Manchester Avenue near the City Drive off-ramp of the Interstate 5 freeway. http://www.agmd.gov/docs/default-source/cega/comment-letters/2016/january/mndolson.pdf	Draft Mitigated Negative Declaration	City of Anaheim	SCAQMD staff commented 1/17/2016
	Comment Period: 12/31/2015 - 1/19/2016 Public Hearing: 1/25/2015			
General Land Use (residential, etc.) ORC160105-08 Riverdale Residential Project	The proposed project consists of developing 75 single-family residences, common landscape areas, and a passive park on approximately 12.09 acres of land on East Riverdale Avenue north of State Route 91. Reference ORC151023-06	Response to Comments	City of Anaheim	Document reviewed - No comments
	Comment Period: N/A Public Hearing: N/A			
General Land Use (residential, etc.) ORC160128-01 First Street Apartments Project	The proposed project consists of demolition of an existing 47,040-square-foot office building and associated surface parking, followed by construction and occupation of 69 all-affordable family apartment units. The development would include seven buildings. The project is located at 1440 East First Street. <u>http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/february/mndfirst.pdf</u> Comment Period: 1/25/2016 - 2/23/2016 Public Hearing: N/A	Draft Mitigated Negative Declaration	City of Santa Ana	SCAQMD staff commented 2/17/2016
General Land Use (residential, etc.)	Comment Period: 1/25/2016 - 2/23/2016 Public Hearing: N/A The proposed project consists of a mixed-use single family and multi-family residential and	Draft	City of Wildomar	SCAQMD
RVC160105-01 Baxter Village Mixed-Use Project	Interproposed project consists of a mixed use single family and matrix turning residential and commercial retail development that includes 66 single-family residential units, a 204-unit multi-family apartment complex and 75,000 square feet of commercial/retail development. The project is located west of the I-15 freeway and north of Baxter Road. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/deirbaxter.pdf Comment Period: 12/30/2015 - 2/12/2016 Public Hearing: N/A	Environmental Impact Report		staff commented 1/20/2016
General Land Use (residential, etc.)	The proposed project consists of subdividing 53.3 acres into 206 residential lots with a minimum	Notice of a	County of Riverside	Document
RVC160105-04 Specific Plan No. 260A2, Substantial Conformance No. 1, Change of Zone No. 7870, Tentative Tract Map No. 31500	lot size of 4,000 square feet and twelve open space lots totaling approximately 6.74 acres. The project is located south of Highway 74, west of Sultanas Road, east of Emperor Road and North of McLaughlin Road.	Public Hearing		reviewed - No comments
	Comment Period: N/A Public Hearing: 1/20/2016			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

	JANUARY 1, 2016 10 JANUARY 31, 2016	-		
SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF	LEAD AGENCY	COMMENT
PROJECT TITLE		DOC.		STATUS
General Land Use (residential, etc.)	The proposed project consists of developing 398 single-family residential lots, a community park	Final	City of Jurupa	Document
RVC160127-03 Highland Park Project	and open space on a 168.3 gross acre site located on Canal Street and the Union Pacific Railroad. Reference RVC151016-01	Environmental Impact Report	Valley	reviewed - No comments
	Comment Period: N/A Public Hearing: N/A			
General Land Use (residential, etc.)	The proposed project consists of an extension of the current tract map one year, up to a maximum	Initial Project	City of Jurupa	Document
RVC160127-05 MA15178 (TTM33262)	of five years.	Consultation	Valley	does not require comments
	Comment Period: 1/27/2016 - 2/10/2016 Public Hearing: N/A			
Plans and Regulations	The proposed project consists of amendments to the Coastal Transportation Corridor Specific	Draft	City of Los Angeles	Preparing
LAC160108-04 Coastal Transportation Corridor Specific Plan and West Los Angeles Transportation Improvement and Mitigation Specific Plan Amendment Project	Plan and West Los Angeles Transportation Improvement and Mitigation Specific Plan. The amendments include an update to the Transportation Impact Assessment fee program, including revisions to the fees, trip generation rates, exemptions, in lieu credits, and affordable housing credits; a new transit-oriented development credit; and updates to the list of transportation improvement and mitigation measures to be funded, in part, by impact fees collected from new development.	Environmental Impact Report		written comments
	Comment Period: 1/7/2016 - 3/7/2016 Public Hearing: N/A			
Plans and Regulations LAC160114-01 Midtown Specific Plan Draft Environmental Impact Report	The proposed project consists of adoption of the Midtown Specific Plan and extraction of the two residential blocks around Officer Black Memorial Park and retention of the underlying conventional zoning designations already in place for these two residential blocks. The project is located east of Pacific Avenue, west of Atlantic Avenue, north of Anaheim Street, and south of Wardlow Road.	Draft Environmental Impact Report	City of Long Beach	Under review, may submit written comments
Plans and Regulations	The proposed project consists of the creation of a 22 single family small lot residential	Draft Mitigated	City of Walnut	Document
LAC160126-06 San Jose Hills Specific Plan	community with common area and landscape on San Jose Hills Road. The project site is 2.67 acres and is currently undeveloped.	Negative Declaration		reviewed - No comments
	Comment Period: 1/20/2016 - 2/19/2016 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

	JANUARI 1, 2010 10 JANUARI 51, 2010			
SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF	LEAD AGENCY	COMMENT
PROJECT TITLE		DOC.		STATUS
<i>Plans and Regulations</i> RVC160108-02 Arantine Hills Specific Plan Amendment	The proposed project consists of a General Plan Amendment which will change the current designation of Agriculture on 276 acres west of Interstate 15, southwest of Cajalco Road, to a range of land uses to accommodate General Commercial, Mixed Use-Commercial Residential; Mixed Use - Commercial Business Park; Low Density Residential; Medium Density Residential; High Density Residential; Parks; Open Space. The Specific Plan will establish a master plan for the same 276 acres establishing corresponding land use designations to the General Plan Amendment. The project is located west of Interstate 15, southwest of Cajalco Road. Reference RVC120515-01	Draft Supplemental Environmental Impact Report	City of Corona	Under review, may submit written comments
Plans and Regulations	Comment Period: 1/8/2016 - 2/22/2016Public Hearing: N/AThe proposed project consists of the development of approximately 321 acres featuring a	Notice of	County of Riverside	SCAOMD
RVC160112-02 GPA No. 1159, SP No. 391, CZ No. 7890, EIR 547 and Tentative Tract Map 36809	residential community with recreation and open space, and a maximum dwelling unit count of 1,200 dwelling units. The project is located northerly of Ramon Road, southerly of Dinah Shore Drive, easterly of Bob Hope Drive, and westerly of Los Alamos Road.	Preparation		staff commented 1/19/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/nopgpa1159.pdf Comment Period: 1/13/2016 - 2/12/2016 Public Hearing: 1/25/2016			
Plans and Regulations SBC160126-05 City of Rialto Pepper Avenue Specific Plan	The proposed project consists of establishing the pattern of development for the area including location, intensity of uses, design and capacity of infrastructure; creating an economic development opportunity for commercial development and increased sales tax revenue adjacent to I-210 corridor; providing essential goods and services to residents; and analyzing the benefits and constraints associated with a link to Frisbie Park and the extension of Easton Avenue. The project is located on Pepper Avenue, near the I-210 Freeway. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/noppepperave.pdf	Initial Study	City of Rialto	SCAQMD staff commented 1/26/2016
L	Comment Period: N/A Public Hearing: 2/4/2016			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

ATTACHMENT B* ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS OR IS CONTINUING TO CONDUCT A CEQA REVIEW

SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	LEAD AGENCY	COMMENT	
PROJECT TITLE		DOC.		STATUS
Waste and Water-related LAC151208-09 Exide Draft Closure Plan and DEIR	The proposed project consists of permanently closing the Exide facility. The project will require Exide to remove all contaminated equipment, buildings, and soil. The project is located at 2700 South Indiana Street in Vernon. Reference LAC150602-13	Draft En vironmental Impact Report	Department of Toxic Substances Control	Preparing written comments
	Comment Period: 12/8/2015 - 3/28/2016 Public Hearing: 2/3/2016			
Warehouse & Distribution Centers	The proposed project consists of an industrial development project consisting of one 446,173-	Draft	City of Eastvale	SCAQMD
RVC151208-01 LBA Realty Eastvale Industrial Development Project	square-foot industrial warehouse building, parking, utility and stormwater infrastructure and landscaping on a 23.5-acre parcel. The project is located on Cantu-Galleano Ranch Road.	Environmental Impact Report		staff commented 1/15/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/deireastvale.pdf			
	Comment Period: 12/9/2015 - 1/25/2016 Public Hearing: N/A			
Airports LAC151229-02 Bob Hope Airport Replacement Terminal Project	The proposed project consists of developing a 14-gate replacement passenger terminal building and related improvements at the Bob Hope Airport on one of two Authority-owned properties in the City of Burbank.	Notice of Preparation	Burbank-Glendale- Pasadena Airport Authority	SCAQMD staff commented 1/6/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/nopbobhope.pdf			
	Comment Period: 12/29/2015 - 1/31/2016 Public Hearing: N/A			
Industrial and Commercial LAC151210-03 Asphalt Plant Replacement and Modernization project	The proposed project consists of a new plant that will use up to 50% of recycled asphalt pavement material as part of an enhanced asphalt production system. The project is located at 2484 East Olympic Boulevard	Draft Mitigated Negative Declaration	City of Los Angeles	SCAQMD staff commented 1/14/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/mndasphalt1.pdf			
	Comment Period: 12/10/2015 - 1/11/2016 Public Hearing: N/A			
Waste and Water-related LAC151215-02 Pond 1 Closure Plan	The proposed project consists of an Interim Measure Work Plan and Revised Pond 2 Closure Plan for a permitted hazardous waste facility located at 8851 Dice Road in Santa Fe Springs. The Work Plan will require the facility to clean up hexavalent chromium in soil near a former underground chromic acid tank. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/february/otherphibro-tech.pdf	Community Notice	Department of Toxic Substances Control	SCAQMD staff commented 2/2/2016
	Comment Period: 12/15/2015 - 2/15/2016 Public Hearing: N/A			

*Sorted by Comment Status, followed by Land Use, then County, then date received.

- Project has potential environmental justice concerns due to the nature and/or location of the project.

ATTACHMENT B ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS OR IS CONTINUING TO CONDUCT A CEQA REVIEW

	UK IS CONTINUING TO CONDUCT A CEQA REVIEW			
SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF	LEAD AGENCY	COMMENT
PROJECT TITLE		DOC.		STATUS
Utilities SBC151229-01 Community Recreation Center, 1310 Oak Valley Parkway (15-CUP-14)	The proposed project consists of a disguised wireless telecommunications facility that includes the installation of a 60-foot monopine to include twelve panel antennas and one parabolic antenna. The project is located at 1310 Oak Valley Parkway.	Initial Project Consultation	City of Beaumont	SCAQMD staff commented 1/6/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/mndcell15cup14.pdf			
	Comment Period: 12/29/2015 - 1/8/2016 Public Hearing: N/A			
Transportation ORC151202-01 State Route 55 Improvement Project Between Interstate 405 and Interstate 5	The proposed project consists of widening State Route 55 in both directions from north of the Interstate 405/SR-55 Interchange to south of the Interstate 5/SR-55 Interchange between Post Miles 6.4 and 10.3, traversing the cities of Santa Ana, Tustin, and Irvine.	Draft Mitigated Negative Declaration	California Department of Transportation	SCAQMD staff commented 1/6/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/mndsr55.pdf			
	Comment Period: 11/25/2015 - 1/8/2016 Public Hearing: 12/10/2015			
Institutional (schools, government, etc.) ORC151229-08 Central Energy Plant Expansion	The proposed project consists of demolition of an approximately 6,000-gross-square-foot structure and construction of four components to provide increased chiller capacity to the University of California, Irvine Medical Center.	Draft Mitigated Negative Declaration	University of California, Irvine	SCAQMD staff commented 1/14/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/mnducicentral.pdf			
	Comment Period: 12/23/2015 - 1/22/2016 Public Hearing: N/A			
General Land Use (residential, etc.)	The proposed project consists of subdivision and development of a 229-home private community	Draft	City of Los Angeles	SCAQMD
LAC151204-03 6433 La Tuna Canyon Road	with gated access on the 58.32-acre site.	Environmental Impact Report		staff commented 2/3/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/february/deirlastunas.pdf			
	Comment Period: 12/3/2015 - 2/3/2016 Public Hearing: N/A			
General Land Use (residential, etc.)	The proposed project consists of a pre-application for a zone change and General Plan	Initial Project	City of Jurupa	SCAQMD
RVC151229-03 MA15183/ PAR 15004	amendment to change the property from light industrial to residential and subdivide the vacant land into single-family homes. The project is located at 6501 Clay Street.	Consultation	Valley	staff commented 1/6/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/nop15183.pdf			
	Comment Period: 12/29/2015 - 1/6/2015 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

ATTACHMENT B ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS OR IS CONTINUING TO CONDUCT A CEOA REVIEW

SCAQMD LOG-IN NUMBER	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
PROJECT TITLE		200.		5111105
Plans and Regulations	The proposed project consists of the Downtown Hawthorne Specific Plan. The Plan area totals	Draft	City of Hawthorne	SCAQMD
LAC151223-04	approximately 794 acres. The Plan designates five land use areas (Residential, Hotel Hub,	Environmental		staff
	Commercial, Mixed-Use and Public/Quasi Public) and five opportunity sites known as	Impact Report		commented
Downtown Hawthorne Specific Plan	Transformation Projects. The environmental analysis will examine the potential impacts of the			1/19/2016
	total Specific Plan area in 2035 as Program EIR and the five Transformative Project sites in 2020			
	as a Project EIR.			
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/deirhawthorne.pdf			
	Comment Period: 12/18/2015 - 2/4/2016 Public Hearing: N/A			
Plans and Regulations	The proposed project consists of a long-range master plan that over time would develop a portion	Notice of	County of Los	SCAQMD
LAC151229-14	of what was formerly the largest landfill in the western United States into a regional park,	Preparation	Angeles	staff
Puente Hills Landfill Park Master Plan	providing recreational and open space for the greater Los Angeles area. The project is located			commented
r dente mins Landini r ark Master r lan	southeast of the intersection of SR-60 and Interstate 605 freeways in the unincorporated County.			1/16/2016
	http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2016/january/noppuentehills.pdf			
	Comment Period: 12/18/2015 - 2/1/2016 Public Hearing: N/A			

- Project has potential environmental justice concerns due to the nature and/or location of the project.

ATTACHMENT C ACTIVE SCAQMD LEAD AGENCY PROJECTS THROUGH JANUARY 31, 2016

	IROUGH JANUA			
PROJECT DESCRIPTION	PROPONENT	TYPE OF	STATUS	CONSULTANT
		DOCUMENT		
The Phillips 66 (formerly ConocoPhillips) Los Angeles Refinery Ultra	Phillips 66	Environmental	The Notice of Preparation/ Initial Study	Environmental
Low Sulfur Diesel project was originally proposed to comply with	(formerly	Impact Report	(NOP/IS) was circulated for a 30-day	Audit, Inc.
federal, state and SCAQMD requirements to limit the sulfur content of	ConocoPhillips),	(EIR)	public comment period on March 26,	
diesel fuels. Litigation against the CEQA document was filed.	Los Angeles		2012 to April 26, 2012. The consultant	
Ultimately, the California Supreme Court concluded that the SCAQMD	Refinery		submitted the administrative Draft EIR to	
had used an inappropriate baseline and directed the SCAQMD to			SCAQMD in late July 2013. The Draft	
prepare an EIR, even though the project has been built and has been in			EIR was circulated for a 45-day public	
operation since 2006. The purpose of this CEQA document is to			review and comment period from	
comply with the Supreme Court's direction to prepare an EIR.			September 30, 2014 to November 13,	
			2014. Two comment letters were	
			received and responses to comments are	
			being prepared.	
Tesoro Refinery proposes to integrate the Tesoro Wilmington	Tesoro Refining	Environmental	A previous Draft Negative Declaration	Environmental
Operations with the Tesoro Carson Operations (former BP Refinery).	and Marketing	Impact Report	was withdrawn in order for the storage	Audit, Inc.
The proposed project also includes modifications of storage tanks at	Company Los	(EIR)	tank project to be analyzed in a new	
both facilities, new interconnecting pipelines, and new electrical	Angeles Refinery		CEQA document that also addresses the	
connections. In addition, Carson's Liquid Gas Rail Unloading facilities			Tesoro-BP Refinery Integration Project.	
will be modified. The proposed project will be designed to comply with			A NOP/IS was prepared for the	
the federally mandated Tier 3 gasoline specifications and with State and			integration project and released for a 30-	
local regulations mandating emission reductions.			day public review and comment period	
			from September 10, 2014 to October 10,	
			2014. 86 comment letters were received,	
			and responses to comments are being	
			prepared. The consultant has prepared a	
			Draft EIR which is under review by	
			SCAQMD staff.	
Quemetco is proposing an increase in the daily furnace feed rate.	Quemetco	Environmental	An Initial Study has been prepared by the	Trinity
		Impact Report	consultant and is under review by	Consultants
		(EIR)	SCAQMD staff.	
DCOR LLC is proposing to install three flares on their off-shore oil	DCOR LLC	Mitigated	A preliminary draft MND has been	RBF Consulting
Platform Esther.		Negative	prepared by the consultant and is under	
		Declaration	review by SCAQMD staff.	
		(MND)		



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 8

- PROPOSAL: Issue Program Announcements for Electric Lawn Mower Vendors, Licensed Scrappers and Support Service Providers
- SYNOPSIS: Staff proposes to extend the Lawn Mower Exchange Program by offering similar incentives in fall 2016 to generate cost-effective emission reductions. This action is to issue Program Announcements to solicit competitive bids from manufacturers of cordless battery-electric lawn mowers in sufficient quantities and at the lowest possible price for the 2016 program as well as from licensed scrappers and support service providers to physically handle mowers at lawn mower exchange events.
- COMMITTEE: Mobile Source, February 19, 2016; Recommended for Approval

RECOMMENDED ACTION:

Approve issuance of the following Program Announcements for the Lawn Mower Exchange Program:

- 1. #PA2016-08 for production of up to 3,000 electric lawn mowers;
- 2. #PA2016-09 for scrapping old gasoline-powered lawn mowers; and
- 3. #PA2016-07 for support service providers at exchange events.

Barry R. Wallerstein, D. Env. Executive Officer

MMM:FM:VY

Background

Over the last 13 years, SCAQMD has conducted 96 lawn mower exchange events where over 55,000 operable gasoline-powered lawn mowers were exchanged for zero emission cordless battery-electric lawn mowers. The program has helped mitigate a significant amount of emissions. Individuals exchanging their lawn mowers pay a substantially discounted price.

The 2015-16 Carl Moyer Program (Year 18) provides a subsidy of \$145 for every gasoline-powered lawn mower exchanged for a cordless zero emission electric lawn mower.

Proposals

This action is to release three Program Announcements to conduct additional events in fall 2016.

Program Announcement #PA2016-08 is to solicit competitive proposals from qualified manufacturers/suppliers for the production and supply of cordless battery-electric lawn mowers to be used in the Lawn Mower Exchange Program in the South Coast Air Basin. Participants will be offered a specific discount and an option to choose from different manufacturers/models. The goal of this solicitation is to identify potential manufacturers/suppliers and products for SCAQMD's Lawn Mower Exchange Program at the lowest possible price. Proposals from Original Equipment Manufacturers/suppliers are to include, but not be limited to, the following:

- Detailed product specification
- Availability
- Supply commitment
- Manufacturer's Suggested Retail Price (MSRP)
- <u>Price offered to SCAQMD:</u> Each manufacturer must provide their best price for each model they plan to offer. Although the SCAQMD plans to exchange up to a total of 3,000 mowers, there is no way to predict how many of each make or model will be sold.
 - Lead time
 - Details of assistance to be provided for the lawn mower exchange event advertisement outreach
 - <u>Details on exchange-event staffing to be provided by the company:</u> At minimum, each company is expected to provide adequate staff to operate its own cashier stations and product loading lines. In addition, each company must staff a small display area at each event where undecided customers can see and discuss the product.
 - Product warranty information to be provided to consumer

Program Announcement #PA2016-09 is to solicit competitive bids from licensed scrappers to provide roll-off bins and the required staff to collect lawn mowers, drain fuel from the gas mowers, and haul the fuel and the mowers for scrapping to a licensed scrapping yard, all in a safe manner and in compliance with all applicable federal, state and local laws.

Under Program Announcement #PA2016-07, competitive bids are also being sought from vendors to provide traffic control and provide staffing to unload gasoline mowers from participant vehicles at the Lawn Mower Exchange Program events.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the PAs and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the PAs will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<u>http://www.aqmd.gov</u>) where it can be viewed by making the selection "Grants & Bids."

Bid Evaluation

SCAQMD staff will evaluate the proposals based on product specifications, availability, production capacity and the lead time, price of the product and the exchange event assistance capabilities of the contractor.

Resource Impacts

The amount of funding necessary will be determined after the selection of contractors is made from the submitted proposals.

Attachments

- 1. Program Announcement #PA2016-08 Lawn Mower Exchange Program
- 2. Program Announcement #PA2016-09 Licensed Scrappers/Recyclers
- 3. Program Announcement #PA2016-07 Support Service Providers

Announcing the

South Coast Air Quality Management District's

Lawn Mower Exchange Program

Program Announcement

#PA2016-08

March 4, 2016

DATE:	March 4, 2016
TO:	All Interested Parties
FROM:	Barry Wallerstein, Executive Officer, SCAQMD
SUBJECT:	SCAQMD Lawn Mower Exchange Program Announcement

The South Coast Air Quality Management District (SCAQMD) is pleased to announce a funding opportunity for implementation of the Lawn Mower Exchange Program in the fall of 2016. This program is designed to identify potential manufacturers/suppliers of cordless electric lawn mowers to be used in the lawn mower exchange program in the South Coast Air Basin. Contracts may be awarded to multiple manufacturers/suppliers. All interested parties are encouraged to apply. The required product specifications are listed in Section D.

The SCAQMD staff is available to assist applicants during the preparation of their applications for this program. Points of contact for administrative and technical assistance are included in the attached Program Announcement in Section F.

Should you have any questions regarding this Program Announcement, please contact

Mr. Vasken Yardemian, Senior Staff Specialist, at (909) 396-3296. The Announcement

and Application documents can also be accessed via the Internet by visiting SCAQMD's

website at <u>http://www.aqmd.gov</u>.

Our main objective is to reduce exposure to harmful emissions from the use of gasoline powered lawn mowers in the South Coast Air Basin and we look forward to receiving your application.

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A. LAWN MOWER EXCHANGE PROGRAM OVERVIEW

The purpose of this Program Announcement is to solicit competitive proposals from qualified contractors for the production and supply of cordless battery-electric lawn mowers to be used in a lawn mower exchange program in the South Coast Air Basin. The goal of this proposal is to identify potential manufacturers/suppliers and products for SCAQMD's Lawn Mower Exchange Program at the lowest possible price. Contracts may be awarded to multiple manufacturers/suppliers.

The successful bidders should be knowledgeable and experienced in the manufacture, and commercial distribution of reliable cordless electric lawn mowers. They should have a network of customer service and distribution centers.

Total SCAQMD funding to be allocated would depend upon the availability of funds and the amount of buy down per unit offered by the manufacturer at the time of the lawn mower exchange events.

B. PROGRAM SCHEDULE

The implementation schedule of this program is illustrated below

March 4, 2016	Issue the Program Announcement & Application #PA2016-08
April 15, 2016	Applications due no later than 1:00 PM
May 20, 2016	Proposals approved by Mobile Source Committee
June 3, 2016	Proposals approved by Board
July 15, 2016	Contract Execution
December 31, 2016	Completion of Program

C. APPLICATION SUBMITTAL

The applicant shall submit <u>four copies</u> of the application and the project proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the applicant and the words "Program Application #PA2016-08. All applications for the Lawn Mower Exchange Program are due no later than 1:00 p.m., April 15, 2016.

Procurement Unit South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA. 91765

The written proposals must be received by SCAQMD by the specified date and time regardless of when they may be postmarked for delivery. Email and faxed copies will not be accepted.

D. PARTICIPATION GUIDELINES, REQUIREMENTS, & CONDITIONS

Amounts of Funding

The amount of SCAQMD funding will be determined at a later date prior to the scheduling of lawn mower exchange events

Proposal Requirements

The South Coast Air Quality Management District (SCAQMD) is pleased to announce a funding opportunity for implementation of the Lawn Mower Exchange Program in the fall of 2016. SCAQMD intends to provide the participants the opportunity of selecting from a choice of makes and models of cordless electric mowers including different cutting widths. Participants in the Program will have to pre-register either online or by phone and select the make/model of the cordless battery-electric lawn mower they intend to purchase. SCAQMD will provide the pre-registered participants a fixed incentive amount towards the purchase of a model of their choice by paying the required cost differential. Bidders to this Program Announcement should provide the following specification details for each of the models they are proposing and must have the capability to produce and supply up to a total of 3,000 cordless battery-electric lawn mowers by September 1, 2016. If additional funds become available larger quantities may be needed.

Specifications	
Cordless/Rechargeable	Yes/No
Clipping Bag Included	Yes/No
Cutting width	
Ease of Assembly	
Height adjustability (Range)	

Mulching Capability	Yes/No				
If yes, is it included in the price?	Yes/No				
Self-propelled?	Yes/No				
List of Service locations local to SCAQMD					
Battery:					
Charging Time (From zero charge)					
Lift-out Replaceable Battery	Yes/No				
Mowing Time per charge					
Battery - Voltage					
Battery – Amp Hour Capacity					
Warranty:					
Warranty Exchange					
Warranty period for the mower					
Warranty period for the battery					
Weight (Including Battery)					
Toll-free service number					
Cost and Promotional Information					
Manufacturer's Suggested Retail Price (MSRP)					
Cost to AQMD (Quantities of up to 3,000)					
Advertising/Promotional Assistance (\$\$)					
Promotional mowers provided	Yes/No; How many?				
Event Staffing	Yes/No				

During the Lawn Mower Exchange Program, the SCAQMD intends to offer these lawn mowers to the consumers at a subsidized price in exchange for their old operable gasoline powered lawn mowers. Proposals from manufacturers /suppliers should include but not be limited to the following information for production quantities of up to 3,000 units. As the participants are given the choice of make/model the actual numbers of different mowers would not be known until after the registration process is completed.

- Detailed product specification
- Availability
- Supply commitment
- Lead time
- Details of assistance to be provided for the lawn mower exchange event advertisement outreach.
- <u>Details on exchange-event staffing to be provided by the company.</u> At a minimum, each company is expected to provide adequate staff to operate its own cashier stations and product loading lines. In addition, each company must staff a small display area at each event where undecided customers can see and discuss the product.
- Product warranty information to be provided to consumer.
- Service Centers: Minimum of 5 locations required with at least one center located in each of the four counties served by SCAQMD.
- Price offered to SCAQMD: Each manufacturer must provide their best price for each model they plan to

offer. Although the AQMD plans to exchange up to a total of 3,000 mowers, there is no way to predict how many of each make or model will be sold. The following table provides guidance for the maximum allowable price per each category.

	Non Self Propelled	Self Propelled
Maximum cost to SCAQMD	\$325	\$395

In the selection process preference may be given to models with the best specifications and or cost-effectiveness.

Company Contact

Proposers shall provide the company's contact person's name, address, phone numbers and the email address.

E. PROJECT IMPLEMENTATION

Project Selection

Contractor(s) will be selected based on, but not limited to, the following criteria:

- Product specifications
- Price of the units
- Lead times

Project Completion Deadlines

Product shall be available no later than September 1, 2016.

F. IF YOU NEED HELP

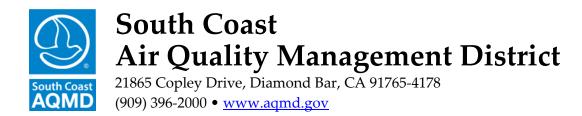
This Program Announcement and Application can be obtained by accessing the SCAQMD web site at <u>http://www.aqmd.gov</u>. SCAQMD staff members are available to answer questions during the application acceptance period. In order to help expedite assistance, please direct your inquiries to the applicable staff person, as follows:

• For General, Administrative, or Technical Assistance, please contact:

Vasken Yardemian Senior Staff Specialist Phone: 909-396-3296 Fax: 909-396-3632 vyardemian@aqmd.gov

ATTACHMENT A

CERTIFICATIONS AND REPRESENTATIONS



Business Information Request

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

If you do not return this information, we will <u>not</u> be able to establish you as a vendor. This will delay any payments and would <u>still</u> necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Michael B. O'Kelly Chief Financial Officer

DH:tm

Enclosures: Business Information Request Disadvantaged Business Certification W-9 Form 590 Withholding Exemption Certificate Federal Contract Debarment Certification Campaign Contributions Disclosure Direct Deposit Authorization



BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business Check One:	 Individual DBA, Name, County Filed in Corporation, ID No LLC/LLP, ID No Other

REMITTING ADDRESS INFORMATION

Address										
Address										
City/Town										
State/Province					Zip					
Phone	()	-	Ext	Fax	()	-		
Contact					Title					
E-mail Address										
Payment Name if Different										

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE),

minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below <u>for contracts or purchase orders funded in whole</u> or in part by federal grants and contracts.

- 1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
- 2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
- 3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
- 4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
- 5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
- 6. If subcontracts are to be let, take the above affirmative steps.

<u>Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with</u> <u>SCAQMD Procurement Policy and Procedure:</u>

Check all that apply:	
 Small Business Enterprise/Small Business Joint Venture Local business Minority-owned Business Enterprise 	 Women-owned Business Enterprise Disabled Veteran-owned Business Enterprise/DVBE Joint Venture Most Favored Customer Pricing Certification
Percent of ownership:%	
Name of Qualifying Owner(s):	
State of California Dublic Works Contractor D	Distruction No. MUST DE

State of California Public Works Contractor Registration No. _______. MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

NAME

TITLE

TELEPHONE NUMBER

DATE

Definitions

Disabled Veteran-Owned Business Enterprise means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

Joint Venture means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

Local Business means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

Minority-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

"Minority" person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

Small Business Enterprise means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
 - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
 - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

Small Business Joint Venture means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

Women-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

Most Favored Customer as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

	· · · · · · · · · · · · · · · · · · ·											
ge 2.	2 Business name/disregarded entity name, if different from above											
3 Check appropriate box for federal tax classification; check only one of the following seven boxes: Individual/sole proprietor or C Corporation S Corporation Partnership Trust/estate single-member LLC Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ►					4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any)							
Print or type Specific Instructions	Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box i the tax classification of the single-member owner.	· · · ·	above fo	C	ode (if a			÷.				
<u>و</u> ک	Other (see instructions) ►	-				counts mai		Jutside	the U.S	s.)		
becif	5 Address (number, street, and apt. or suite no.)	Request	ter's nan	ne and	addres	s (option	ial)					
See SI	6 City, state, and ZIP code	Ì										
	7 List account number(s) here (optional)											
Pa	rt I Taxpayer Identification Number (TIN)											
Enter	r your TIN in the appropriate box. The TIN provided must match the name given on line 1 to a	/oid	Social	secur	ity num	ber						
	up withholding. For individuals, this is generally your social security number (SSN). However,					\square		\square				
	lent alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For othe ies, it is your employer identification number (EIN). If you do not have a number, see <i>How to ge</i>				-	-	-					
	on page 3.		or									
Note	If the account is in more than one name, see the instructions for line 1 and the chart on page	4 for	Emplo	yer ide	entificat	tion num	nber					
	elines on whose number to enter.			7 F			T		_			
				-								
Pa	rt II Certification											
Unde	er penalties of perjury, I certify that:											
1. Th	he number shown on this form is my correct taxpayer identification number (or I am waiting fo	r a numb	er to be	e issu	ed to m	ie); and	l -					
Se	2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and											
3. Ia	am a U.S. citizen or other U.S. person (defined below); and											
4 Th	- FATOA and (a) antennal an this forms (if any) indication that I are support from FATOA are ati											

The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

1 Name (as shown on your income tax return). Name is required on this line: do not leave this line blank

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign	Signature of
Here	U.S. person >

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted. Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- · Form 1099-INT (interest earned or paid)
- · Form 1099-DIV (dividends, including those from stocks or mutual funds)

· Form 1099-MISC (various types of income, prizes, awards, or gross proceeds) · Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)

· Form 1099-S (proceeds from real estate transactions)

· Form 1099-K (merchant card and third party network transactions)

· Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)

- · Form 1099-C (canceled debt)
- · Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

- If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.
- By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued).

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

 Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See What is FATCA reporting? on page 2 for further information.

Cat. No. 10231X

Date 🕨

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

An individual who is a U.S. citizen or U.S. resident alien;

 A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;

· An estate (other than a foreign estate); or

A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

 In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;

 In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and

 In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

 You do not certify your TIN when required (see the Part II instructions on page 3 for details), 3. The IRS tells the requester that you furnished an incorrect TIN,

 The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

 You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See Exempt payee code on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see Special rules for partnerships above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See Exemption from FATCA reporting code on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; do not leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. Individual. Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. Sole proprietor or single-member LLC. Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation. Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. Other entities. Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. Disregarded entity. For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the entity is also complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code

 Generally, individuals (including sole proprietors) are not exempt from backup withholding.

 Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.

 Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

 Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2-The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5-A corporation

6-A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8-A real estate investment trust

9-An entity registered at all times during the tax year under the Investment Company Act of 1940

10-A common trust fund operated by a bank under section 584(a)

11-A financial institution

12-A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947 The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for	THEN the payment is exempt for
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B-The United States or any of its agencies or instrumentalities

C-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E-A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G-A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I-A common trust fund as defined in section 584(a)

J-A bank as defined in section 581

K_A broker

L-A trust exempt from tax under section 664 or described in section 4947(a)(1) M-A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.ssa.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an TIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-82-93676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see Exempt payee code earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

 Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

 Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
 Individual Two or more individuals (joint account) 	The individual The actual owner of the account or, if combined funds, the first individual on the account'
 Custodian account of a minor (Uniform Gift to Minors Act) 	The minor ²
 a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law 	The grantor-trustee' The actual owner'
 Sole proprietorship or disregarded entity owned by an individual 	The owner ^a
 Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i) (A)) 	The grantor*
For this type of account:	Give name and EIN of:
 Disregarded entity not owned by an individual 	The owner
8. A valid trust, estate, or pension trust	Legal entity
 Corporation or LLC electing corporate status on Form 8832 or Form 2553 	The corporation
 Association, club, religious, charitable, educational, or other tax- exempt organization 	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
 Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments 	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i) (B))	The trust

¹List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

²Circle the minor's name and furnish the minor's SSN.

Circle the minor's name and furnish the minor's SSN.

- ³You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.
- ⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see Special rules for partnerships on page 2.

*Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- · Be careful when choosing a tax preparer

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

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The payee completes this form and submits it to the withholding age Vithholding Agent (Type or print)	ent.
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ayee	<u> </u>
ame	SSN or ITIN FEIN CA Corp no. CA SOS file no
ddress (apt./ste., room, PO Box, or PMB no.)	
,,,,,,	
ity (If you have a foreign address, see instructions.)	State ZIP Code
cemption Reason	
heck only one reason box below that applies to the payee.	
y checking the appropriate box below, the Payee certifies the reason equirements on payment(s) made to the entity or individual.	n for the exemption from the California income tax withholding
Individuals — Certification of Residency: I am a resident of California and I reside at the address show notify the withholding agent. See instructions for General Inf	wn above. If I become a nonresident at any time, I will promptly formation D, Definitions.
California Secretary of State (SOS) to do business in Califor	n California or ceases to do any of the above, I will promptly notify
California SOS, and is subject to the laws of California. The	in California at the address shown above or is registered with the partnership or LLC will file a California tax return. If the partnershi the withholding agent. For withholding purposes, a limited liability
	Taxation Code (R&TC) Section 23701 (insert letter) or r). If this entity ceases to be exempt from tax, I will promptly notify ities.
Insurance Companies, Individual Retirement Arrangements The entity is an insurance company, IRA, or a federally qual	
	e above-named trust is a California resident. The trust will file a t beneficiary becomes a nonresident at any time, I will promptly
Estates — Certification of Residency of Deceased Person: I am the executor of the above-named person's estate or tru The estate will file a California fiduciary tax return.	st. The decedent was a California resident at the time of death.
Nonmilitary Spouse of a Military Servicemember: I am a nonmilitary spouse of a military servicemember and requirements. See instructions for General Information E, M	
ERTIFICATE OF PAYEE: Payee must complete and sign below.	
nder penalties of perjury, I hereby certify that the information provid orrect. If conditions change, I will promptly notify the withholding age	
	Telephone ()
ayee's name and title (type or print)	

2015 Instructions for Form 590

Withholding Exemption Certificate References in these instructions are to the California Revenue and Taxation Code (R&TC).

General Information

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For information on California backup withholding, go to **ftb.ca.gov** and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to edd.ca.gov or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a Seller of California real estate. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from real estate withholding.

The following are excluded from withholding and completing this form:

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.

- Payments to nonresidents for royalties from activities sourced to California.
- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed certificate on the preprinted form, the withholding agent may accept as a substitute certificate a letter from the payee explaining why the payee is not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number. The withholding agent must retain a copy of the certificate or substitute for at least four years after the last payment to which the certificate applies, and provide it upon request to the FTB.

For example, if an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

D Definitions

For California non-wage withholding purposes, nonresident includes all of the following:

- · Individuals who are not residents of
- California. • Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or if it is a foreign corporation qualified to transact intrastate business by the CA SOS. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

Domicile is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

Specific Instructions

Payee Instructions

Enter the withholding agent's name.

Enter the payee's information, including the taxpayer identification number (TIN) and check the appropriate TIN box.

You must provide an acceptable TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

Private Mail Box (PMB) – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

Foreign Address - Enter the information in the following order: City, Country, Province/ Region, and Postal Code. Follow the country's practice for entering the postal code. Do not abbreviate the country's name.

Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

Withholding Agent Instructions

Keep Form 590 for your records. Do not send this form to the FTB unless it has been specifically requested.

For more information, contact Withholding Services and Compliance, see Additional Information.

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- · The corporation ceases to have a permanent place of business in California or ceases to
- be gualified to do business in California. The partnership ceases to have a permanent
- place of business in California. The LLC ceases to have a permanent place
- of business in California. · The tax-exempt entity loses its tax-exempt
- status

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

Additional Information

For additional information or to speak to a representative regarding this form, call the Withholding Services and Compliance telephone service at:

Telephone: 888.792.4900 916.845.4900 916.845.9512 Fax:

OR write to: WITHHOLDING SERVICES AND **COMPLIANCE MS F182**

FRANCHISE TAX BOARD PO BOX 942867 SACRAMENTO CA 94267-0651

You can download, view, and print California tax forms and publications at ftb.ca.gov.

OR to get forms by mail write to:

TAX FORMS REQUEST UNIT FRANCHISE TAX BOARD PO BOX 307 RANCHO CORDOVA CA 95741-0307

For all other questions unrelated to withholding or to access the TTY/TDD numbers, see the

information below.

Internet and Telephone Assistance Website 41. ...

website:	no.ca.gov
Telephone:	800.852.5711 from within the
	United States
	916.845.6500 from outside the
	United States
TTY/TDD:	800.822.6268 for persons with

hearing or speech impairments Asistencia Por Internet y Teléfono

- Sitio web: **ftb.ca.gov** Teléfono: 800.852.5711 dentro de los Estados Unidos 916.845.6500 fuera de los Estados Unidos
- 800.822.6268 para personas con TTY/TDD: discapacidades auditivas o del habla

Page 2 Form 590 Instructions 2014



CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor *plus* contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website (<u>www.aqmd.gov</u>). The list of current MSRC members/alternates can be found at the MSRC website (<u>http://www.cleantransportationfunding.org</u>).

SECTION I.

Contractor (Legal Name): _____

DBA, Name_____, County Filed in_____

Corporation, ID No._____

LLC/LLP, ID No.

List any parent, subsidiaries, or otherwise affiliated business entities of Contractor: *(See definition below).*

SECTION II.

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes No If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.

Campaign Contributions Disclosure, continued:

Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution

I declare the foregoing disclosures to be true and correct.

By:_____

Title:_____

Date:_____

		DEFINITIONS
		Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)
(1)		t subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing than 50 percent of the voting power of another corporation.
(2)	organi	wise related business entity. Business entities, including corporations, partnerships, joint ventures and any other izations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if ne of the following three tests is met:
	(A)	One business entity has a controlling ownership interest in the other business entity.
	(B)	There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:
		 (i) The same person or substantially the same person owns and manages the two entities; (ii) There are common or commingled funds or assets; (iii) The business entities share the use of the same offices or employees, or otherwise share activities, resources or
		personnel on a regular basis;
		(iv) There is otherwise a regular and close working relationship between the entities; or
	(C)	A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178 (909) 396-2000 • <u>www.aqmd.gov</u>

Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

- Individual (Employee, Governing Board Member)
- Vendor/Contractor
- Changed Information

New RequestCancel Direct Deposit

STEP 2: Payee Information

Last Name	First Name		Middle Initial	Title
Vendor/Contractor Business Name (if applicable)				
Address			Apartment or P.O. Box	KNumber
City		State	Zip	Country
Taxpayer ID Number	Telephone Number		Emai	I Address
Taxpayer ID Number			Emai	

Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- 2. This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

<u>STEP 3</u>:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

lere	Name of Bank/Institution				
check F	Account Holder Name(s)				
Staple Voided Check Here	Saving Checking	Account Number		Routing Number	
taple V	Bank Representative Printed Name		Bank Representative Signature		Date
S	ACCOUNT HOLDER SIG	NATURE:			Date

To be Completed by your Bank

For SCAQMD Use Only

Announcing the

South Coast Air Quality Management District's

Funding for Licensed Scrappers/Recyclers of Gasoline Mowers Traded in at SCAQMD's Lawn Mower Exchange Program

Program Announcement

#PA2016-09

March 4, 2016

DATE:	March 4, 2016
то:	All Interested Parties
FROM:	Barry Wallerstein, Executive Officer, SCAQMD
SUBJECT:	SCAQMD Program Announcement for Licensed Scrappers/Recyclers of

The South Coast Air Quality Management District (SCAQMD) is pleased to announce a funding opportunity for scrapping/recycling gasoline lawn mowers traded in at the Lawn Mower Exchange events in the fall of 2016. This program is designed to identify potential scrappers/recyclers with the capacity of providing roll-off bins, the required staff, handling the gas mowers, draining the fuel on site, hauling the mowers to a recycling center and scrapping them all in a safe manner and in accordance with the applicable local, state and federal laws. Contracts may be awarded to multiple entities. All interested parties are encouraged to apply. The required tasks are listed in Section D.

gasoline mowers traded in at SCAOMD's Lawn Mower Exchange Events

The SCAQMD staff is available to assist applicants during the preparation of their applications for this program. Points of contact for administrative and technical assistance are included in the attached Program Announcement in Section F.

Should you have any questions regarding this Program Announcement, please contact Mr. Vasken Yardemian, Senior Staff Specialist, at (909) 396-3296. The Announcement and Application documents can also be accessed via the Internet by visiting SCAQMD's website at <u>http://www.aqmd.gov</u>.

Our main objective is to reduce exposure to harmful emissions from the use of gasolinepowered lawn mowers in the South Coast Air Basin and we look forward to receiving your application.

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A. LAWN MOWER EXCHANGE PROGRAM OVERVIEW

The purpose of this Program Announcement is to solicit competitive proposals from qualified scrappers/recyclers with the capacity of providing roll-off bins, required staff, handling the gas mowers, draining the fuel on-site, hauling the mowers to a recycling center and scrapping them all in a safe manner and in accordance with the applicable local, state and federal laws at all of SCAQMD's 2016 Lawn Mower Exchange events. The goal of this proposal is to identify potential scrappers/recyclers for SCAQMD's Lawn Mower Exchange Program at the lowest possible price. Contracts may be awarded to multiple entities.

The successful bidders should be a licensed scrapper/recycler knowledgeable and experienced in draining fuel, and be able to provide large roll-off bins for the collection of the trade-in gasoline mowers, provide the required staff, render the mowers useless, haul them away to a recycling center, and scrap them all in a safe manner and in accordance with all applicable local, state and federal laws.

B. PROGRAM SCHEDULE

The implementation schedule of this program is illustrated below

March 4, 2016	Issue the Program Announcement & Application #PA2016-09
April 15, 2016	Applications due no later than 1:00 PM
May 20, 2016	Proposals approved by Mobile Source Committee
June 3, 2016	Proposals approved by Board
July 15, 2016	Contract Execution
December 31, 2016	Completion of Program

C. APPLICATION SUBMITTAL

The applicant shall submit <u>four copies</u> of the application and the project proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the applicant and the words "Program Application #PA2016-09. All applications for the Lawn Mower Exchange Program/ are due no later than 1:00 p.m., April 15, 2016.

Procurement Unit South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA. 91765

The written proposals must be received by SCAQMD by the specified date and time regardless of when they may be postmarked for delivery. Email and faxed copies will not be accepted.

D. PARTICIPATION GUIDELINES, REQUIREMENTS, & CONDITIONS

Amounts of Funding

The amount of SCAQMD funding will be determined at a later date prior to the scheduling of lawn mower exchange events

Proposal Requirements

The South Coast Air Quality Management District (SCAQMD) is pleased to announce a funding opportunity for providing scrapping service in connection with SCAQMD's Lawn Mower Exchange Program in the fall of 2016. The lawn mower exchange programs are drive-thru events where pre-registered customers bring their old operable gas mowers and exchange them for cordless electric lawn mowers for a subsidized price. The winning bidder will provide large roll-off bins to the event site, provide the required staff and equipment, drain fuel from the traded gas mowers, render them useless, haul them away to a scrapping yard and scrap them – all in a safe manner and in accordance with all applicable local, State and Federal laws. Unloading of the mowers from vehicles will be the responsibility of a different contractor. SCAQMD anticipates holding up to five events in the fall of 2016 and intends to offer up to 3,000 lawn mowers for exchange at these events. If additional State funds become available larger quantities may be exchanged.

The Tasks required of a successful bidder are as follows:

- **Task 1:** The day before the Lawn mower Exchange event, CONTRACTOR shall place roll-off bins used to collect old gas mowers at pre-determined locations SCAQMD shall inform CONTRACTOR of the date, time and location for each Lawn Mower Exchange event as soon as possible. However, SCAQMD has the right to cancel at any time any or all scheduled events. CONTRACTOR shall not be paid for a cancelled event.
- **Task 2**: During the event, CONTRACTOR shall drain fuel from the gas mowers in a safe manner and in accordance with all the applicable local, state and federal laws and place the emptied gas mowers in the roll-off bins. The drained fuel shall be placed in container(s) approved for fuel collection and transportation by local, state and/or federal law, as applicable.
- **Task 3**: At the end of the event, CONTRACTOR shall haul away the mowers collected at the event to a licensed scrapping yard for scrapping and shall transport the drained fuel for disposal at an authorized disposal facility, all in a safe manner and in accordance with the applicable local, state and federal laws.
- **Task 4**: CONTRACTOR shall be solely responsible for the cleanup of any fuel or other spills in a manner that meets all the applicable local, state and federal laws.

Proposals from Licensed Scrappers/Recyclers should include, but not limited to the following information:

- Cost per exchange event
- Cost per mower handled
- Details of equipment used
- Experience in handling large volume
- Scrapping methodology including final disposal of all materials
- References from recent similar work completed
- Other information that could qualify you to be a successful bidder

Insurance Requirements:

To be eligible the successful bidder shall:

- Furnish evidence to SCAQMD of workers' compensation insurance for each of its employees, in accordance with either California or other states' applicable statutory requirements prior to commencement of any work;
- Furnish evidence to SCAQMD of general liability insurance with a limit of at least \$1,000,000 per occurrence, and \$2,000,000 in a general aggregate prior to commencement of any work on the Contract. SCAQMD shall be named as an

additional insured on any such liability policy, and thirty (30) days written notice prior to cancellation of any such insurance shall be given to SCAQMD;

- Furnish evidence to SCAQMD of automobile liability insurance with limits of at least \$100,000 per person and \$300,000 per accident for bodily injuries, and \$50,000 in property damage, or \$1,000,000 combined single limit for bodily injury or property damage, prior to commencement of any work on this Contract. SCAQMD shall be named as an additional insured on any such liability policy, and thirty (30) days written notice prior to cancellation of any such insurance shall be given to SCAQMD.
- Furnish evidence to SCAQMD of Professional Liability Insurance with an aggregate limit of not less than \$5,000,000.

Company Contact

Bidders shall provide the company's contact person's name, address, phone numbers and the email address.

E. PROJECT IMPLEMENTATION

Project Selection

Contractor(s) will be selected based on, but not limited to, the following criteria:

- Be a licensed scrapper
- Have all necessary permits with EPA for Hazardous Material Disposal
- Be able to provide and transport large roll-off bins from the exchange sites
- Be able to provide trained staff to disable lawn mowers and render them useless
- Be a licensed scrapper capable of scrapping the mowers collected at the events

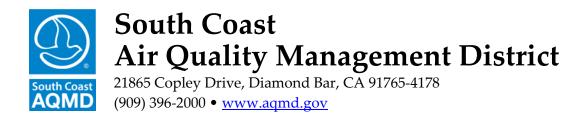
F. IF YOU NEED HELP

This Program Announcement and Application can be obtained by accessing the SCAQMD web site at <u>http://www.aqmd.gov/</u>. SCAQMD staff members are available to answer questions during the application acceptance period. In order to help expedite assistance, please direct your inquiries to the applicable staff person, as follows:

• For General, Administrative, or Technical Assistance, please contact:

Vasken Yardemian Senior Staff Specialist Phone: 909-396-3296 Fax: 909-396-3632 vyardemian@aqmd.gov

ATTACHMENT A CERTIFICATIONS AND REPRESENTATIONS



Business Information Request

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

If you do not return this information, we will <u>not</u> be able to establish you as a vendor. This will delay any payments and would <u>still</u> necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Michael B. O'Kelly Chief Financial Officer

DH:tm

Enclosures: Business Information Request Disadvantaged Business Certification W-9 Form 590 Withholding Exemption Certificate Federal Contract Debarment Certification Campaign Contributions Disclosure Direct Deposit Authorization



BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business Check One:	 Individual DBA, Name, County Filed in Corporation, ID No LLC/LLP, ID No Other

REMITTING ADDRESS INFORMATION

Address										
City/Town										
State/Province					Zip					
Phone	()	-	Ext	Fax	()	-		
Contact					Title					
E-mail Address										
Payment Name if Different										

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE), minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below <u>for contracts or purchase orders funded in whole</u> <u>or in part by federal grants and contracts.</u>

- 1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
- 2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
- 3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
- 4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
- 5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
- 6. If subcontracts are to be let, take the above affirmative steps.

Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with SCAQMD Procurement Policy and Procedure:

Check all that apply:					
 Small Business Enterprise/Small Business Joint Venture Local business Minority-owned Business Enterprise 	 Women-owned Business Enterprise Disabled Veteran-owned Business Enterprise/DVBE Joint Venture Most Favored Customer Pricing Certification 				
Percent of ownership:%					
Name of Qualifying Owner(s):					
State of California Public Works Contractor Registration No					

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

NAME

A.

TITLE

B. TELEPHONE NUMBER

DATE

Definitions

Disabled Veteran-Owned Business Enterprise means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

Joint Venture means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

Local Business means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

Minority-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

"Minority" person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

Small Business Enterprise means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
 - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
 - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

Small Business Joint Venture means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

Women-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

Most Favored Customer as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

nternal	Revenue S	ervice												
	1 Name	(as shown	on your income tax return). Name is required on this line; do	not leave this line blank.										
ge 2.	2 Business name/disregarded entity name, if different from above													
pe ons on page	Indiv sing	vidual/sole le-membe	rillo i i i i i i i i i i i i i i i i i i	on Partnership Trust/estate certain e instructiv					emptions (codes apply only to in entities, not individuals; see ictions on page 3): ipt payee code (if any)					
Print or type Specific Instructions	Note	e. For a sir	v company. Enter the tax classification (C=C corporation, S=S ngle-member LLC that is disregarded, do not check LLC; che cation of the single-member owner.	Scorporation, P=partnership) - Exomption				ion fror	on from FATCA reporting any)					
L L	Othe	ər (see inst	ructions) 🕨					(Ap	plies to	accounts	mainta	ined o	utside t	he U.S.)
Specifi			r, street, and apt. or suite no.)		Reques	ter's n	ame	and	addre	ess (op	tiona	Ŋ		
See	6 City, st	tate, and Z	1P code											
	7 List ac	count num	iber(s) here (optional)											
Par	tl	Taxpay	yer Identification Number (TIN)											
Enter	your TIN i	in the ap	propriate box. The TIN provided must match the name	e given on line 1 to avo	bid	Soci	ial se	curi	ty nui	nber				
			individuals, this is generally your social security number											
			rietor, or disregarded entity, see the Part I instructions yer identification number (EIN). If you do not have a nu						-		-			
	s, it is you i page 3.	ur emploj	yer identification number (EIN). If you do not have a nu	umber, see now to get		or				_	1			
Note	If the acc	count is in	n more than one name, see the instructions for line 1 a	and the chart on page	4 for	Emp	oloye	r ide	ntific	ation r	umb	er		
			mber to enter.	and the onalt on page				Г						=
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Par		Certific	cation											
		s of periu	ry, I certify that:											
			n this form is my correct taxpayer identification numb	er (or I am waiting for	a numb	er to	be is	ssue	ed to	me): a	Ind			
Sei	vice (IRS) that I an	ackup withholding because: (a) I am exempt from bac n subject to backup withholding as a result of a failure backup withholding; and											
3. Iar	n a U.S. (citizen or	other U.S. person (defined below); and											
			ntered on this form (if any) indicating that I am exempt	t from FATCA reporting	q is con	rect.								
nteres genera nstruc	se you ha st paid, a	ave failed cquisition nents oth	ns. You must cross out item 2 above if you have been to report all interest and dividends on your tax return or abandonment of secured property, cancellation of er than interest and dividends, you are not required to	. For real estate transa f debt, contributions to	actions, o an ind	item ividua	2 do al ret	iren	not ap nent a	oply. F arrang	For n	norto ent (II	gage RA),	and
Sign Here		nature of 5. person ▶	•	Da	te Þ									
	eral Ir			Form 1098 (home mor (tuition)	rtgage in	terest)), 109)8-E	(stude	ent loar	n inte	rest),	1098	3-T
Section references are to the Internal Revenue Code unless otherwise noted.				 Form 1099-C (cancele 										
			rmation about developments affecting Form W-9 (such we release it) is at www.irs.gov/fw9.	 Form 1099-A (acquisit 	tion or at	bando	nmer	nt of	secur	ed pro	perty)		
Purp	ose of	Form		Use Form W-9 only if provide your correct TIN	v.					-				
eturn v	with the IR	S must ob	I W-9 requester) who is required to file an information tain your correct taxpayer identification number (TIN) ecurity number (SSN), individual taxpayer identification	If you do not return Fo to backup withholding.	See Wha	t is ba							U D B S	SUDJOCT
umber (ITIN), adoption taxpayer identification number (ATIN), or employer dentification number (EIN), to report on an information return. Examples of information you, or other amount reportable on an information return. Examples of information						ing fo	or a ni	umber						
			limited to, the following:	2. Certify that you are not subject to backup withholding, or										

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
 Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- · Form 1099-S (proceeds from real estate transactions)
- · Form 1099-K (merchant card and third party network transactions)

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

 Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See What is FATCA reporting? on page 2 for further information.

Cat. No. 10231X

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

An individual who is a U.S. citizen or U.S. resident alien;

 A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;

· An estate (other than a foreign estate); or

A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

 In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;

 In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and

 In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

 You do not certify your TIN when required (see the Part II instructions on page 3 for details), 3. The IRS tells the requester that you furnished an incorrect TIN,

 The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

 You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See Exempt payee code on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see Special rules for partnerships above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See Exemption from FATCA reporting code on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; do not leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. Individual. Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. Sole proprietor or single-member LLC. Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation. Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. Other entities. Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. Disregarded entity. For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(ii)). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "5" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

 Generally, individuals (including sole proprietors) are not exempt from backup withholding.

 Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.

 Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

 Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1 – An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2-The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4-A foreign government or any of its political subdivisions, agencies, or instrumentalities

5-A corporation

6-A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7-A futures commission merchant registered with the Commodity Futures Trading Commission

8-A real estate investment trust

9-An entity registered at all times during the tax year under the Investment Company Act of 1940

10-A common trust fund operated by a bank under section 584(a)

11-A financial institution

12-A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947 The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for	THEN the payment is exempt for
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A-An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B-The United States or any of its agencies or instrumentalities

C-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E-A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G-A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I-A common trust fund as defined in section 584(a)

J-A bank as defined in section 581

K-A broker

L-A trust exempt from tax under section 664 or described in section 4947(a)(1) M-A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an TIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-820-8676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see Exempt payee code earlier

Signature requirements. Complete the certification as indicated in items 1 through 5 below

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
 Individual Two or more individuals (joint account) 	The individual The actual owner of the account or, if combined funds, the first individual on the account'
 Custodian account of a minor (Uniform Gift to Minors Act) 	The minor ²
 a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law 	The grantor-trustee' The actual owner'
Sole proprietorship or disregarded entity owned by an individual	The owner ^a
 Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i) (A)) 	The grantor*
For this type of account:	Give name and EIN of:
 Disregarded entity not owned by an individual 	The owner
8. A valid trust, estate, or pension trust	Legal entity
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
 Association, club, religious, charitable, educational, or other tax- exempt organization 	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
 Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments 	The public entity
 Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i) (B)) 	The trust

List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

Circle the minor's name and furnish the minor's SSN.

³You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see Special rules for partnerships on page 2.

*Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN.
- · Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

YEAR

0045 Withhelding Exemption Oostificat

CALIFORNIA FORM

-

	2015 Withholding Exemption Certific	arc	590
Гhe	payee completes this form and submits it to the withholding agent.		
	hholding Agent (Type or print)		
Vam	e		
Pay	 66		
Nam		SSN or ITIN FEIN CA Co	p no. 🗌 CA SOS file no
Addr	ress (apt./ste., room, PO Box, or PMB no.)		
City	(If you have a foreign address, see instructions.)	State ZIP Code	
Exe	mption Reason		
	eck only one reason box below that applies to the payee.		
	checking the appropriate box below, the Payee certifies the reason for uirements on payment(s) made to the entity or individual.	the exemption from the California income tax	withholding
	Individuals — Certification of Residency: I am a resident of California and I reside at the address shown a notify the withholding agent. See instructions for General Inform		will promptly
	Corporations: The corporation has a permanent place of business in California California Secretary of State (SOS) to do business in California. corporation ceases to have a permanent place of business in Ca the withholding agent. See instructions for General Information for	The corporation will file a California tax return alifornia or ceases to do any of the above, I wi	. If this
	Partnerships or Limited Liability Companies (LLCs): The partnership or LLC has a permanent place of business in C California SOS, and is subject to the laws of California. The part or LLC ceases to do any of the above, I will promptly inform the partnership (LLP) is treated like any other partnership.	nership or LLC will file a California tax return.	If the partnershi
	Tax-Exempt Entities: The entity is exempt from tax under California Revenue and Tax Internal Revenue Code Section 501(c) (insert number). If the withholding agent. Individuals cannot be tax-exempt entities	f this entity ceases to be exempt from tax, I wil	sert letter) or I promptly notify
	Insurance Companies, Individual Retirement Arrangements (IR/ The entity is an insurance company, IRA, or a federally qualified		ns:
	California Trusts: At least one trustee and one noncontingent beneficiary of the at California fiduciary tax return. If the trustee or noncontingent be notify the withholding agent.		
	Estates — Certification of Residency of Deceased Person: I am the executor of the above-named person's estate or trust. T The estate will file a California fiduciary tax return.	The decedent was a California resident at the t	ime of death.
	Nonmilitary Spouse of a Military Servicemember: I am a nonmilitary spouse of a military servicemember and I me requirements. See instructions for General Information E, MSRF		(ISRRA)
CEI	RTIFICATE OF PAYEE: Payee must complete and sign below.		
	der penalties of perjury, I hereby certify that the information provided in rect. If conditions change, I will promptly notify the withholding agent.	n this document is, to the best of my knowledg	e, true and
	ree's name and title (type or print)	Telephone ()	
Pay			

2015 Instructions for Form 590

Withholding Exemption Certificate References in these instructions are to the California Revenue and Taxation Code (R&TC)

General Information

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For information on California backup withholding, go to **ftb.ca.gov** and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to edd.ca.gov or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a **Seller of California real estate**. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from real estate withholding.

The following are excluded from withholding and completing this form:

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.

- Payments to nonresidents for royalties from activities sourced to California.
- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed certificate on the preprinted form, the withholding agent may accept as a substitute certificate a letter from the payee explaining why the payee is not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number. The withholding agent must retain a copy of the certificate or substitute for at least four years after the last payment to which the certificate applies, and provide it upon request to the FTB.

For example, if an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

D Definitions

For California non-wage withholding purposes, nonresident includes all of the following:

- Individuals who are not residents of California.
- Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or if it is a foreign corporation qualified to transact intrastate business by the CA SOS. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

Domicile is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRR4

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

Specific Instructions

Pavee Instructions

Enter the withholding agent's name

Enter the payee's information, including the taxpayer identification number (TIN) and check the appropriate TIN box.

You must provide an acceptable TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

Private Mail Box (PMB) – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

Foreign Address - Enter the information in the following order: City, Country, Province/ Region, and Postal Code. Follow the country's practice for entering the postal code. Do not abbreviate the country's name.

Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

Withholding Agent Instructions

Keep Form 590 for your records. Do not send this form to the FTB unless it has been specifically requested.

For more information, contact Withholding Services and Compliance, see Additional Information

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- · The corporation ceases to have a permanent place of business in California or ceases to
- be qualified to do business in California. The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place
- of business in California. The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

Additional Information

For additional information or to speak to a representative regarding this form, call the Withholding Services and Compliance telephone service at:

Telephone: 888.792.4900 916.845.4900 916.845.9512 Fax:

OR write to: WITHHOLDING SERVICES AND COMPLIANCE MS F182 FRANCHISE TAX BOARD PO BOX 942867

SACRAMENTO CA 94267-0651 You can download, view, and print California

tax forms and publications at ftb.ca.gov.

OR to get forms by mail write to: TAX FORMS REQUEST UNIT

FRANCHISE TAX BOARD PO BOX 307 RANCHO CORDOVA CA 95741-0307

For all other questions unrelated to withholding or to access the TTY/TDD numbers, see the

information below.

Internet and Telephone Assistance

Website:	
Telephone:	800.852.5711 from within the
	United States
	916.845.6500 from outside the
	United States
TTY/TDD:	800.822.6268 for persons with

hearing or speech impairments Asistencia Por Internet y Teléfono

- Sitio web: **ftb.ca.gov** Teléfono: 800.852.5711 dentro de los Estados Unidos 916.845.6500 fuera de los Estados Unidos
- 800.822.6268 para personas con TTY/TDD: discapacidades auditivas o del habla

Page 2 Form 590 Instructions 2014



CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor *plus* contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website (<u>www.aqmd.gov</u>). The list of current MSRC members/alternates can be found at the MSRC website (<u>http://www.cleantransportationfunding.org</u>).

SECTION I.

Contractor (Legal Name):

DBA, Name _____, County Filed in _____

Corporation, ID No.______
LLC/LLP, ID No.

List any parent, subsidiaries, or otherwise affiliated business entities of Contractor: *(See definition below).*

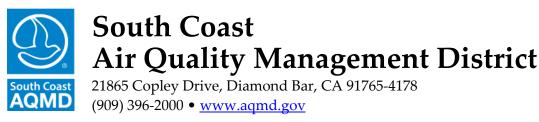
SECTION II.

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes No If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.

Campaign Contributions Disclosure, continued:

	Contributor		
Govern	ning Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of C	Contributor		
Govern	ning Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of C	Contributor		
Govern	ning Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of C	Contributor		
Govern	ning Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Title:			
	DEFINITIO	DNS	
(2) Other organ	DEFINITIO Parent, Subsidiary, or Otherwise Related Business E at subsidiary. A parent subsidiary relationship exists w essing more than 50 percent of the voting power of another rwise related business entity. Business entities, includin nizations and enterprises operated for profit, which do not y one of the following three tests is met:	ntity (2 Cal. Code of Regs., §1870 when one corporation directly or corporation. g corporations, partnerships, joint	indirectly owns shares t ventures and any other



Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

- Individual (Employee, Governing Board Member)
- Vendor/Contractor $\overline{\Box}$ Changed Information

New Request

Cancel Direct Deposit

STEP 2: Payee Information

Last Name	First Name		Middle Initial		Title
Vendor/Contractor Business Name (if applicable)					
Address			Apartment or P.O.	. Box Nu	umber
		0.1			0
City		State	Zip		Country
Tourouse ID Number	Talanhana Number				
Taxpayer ID Number	Telephone Number			mail Ac	Juless

Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial 1. institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you. 2.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient 3. fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

~	Name of Bank/Institution				
d Check	Account Holder Name(s)				
Voided Here	Saving Checking	Account Number		Routing Number	
Staple	Bank Representative Printed Name		Bank Representative Signature		Date
••	ACCOUNT HOLDER SIG	NATURE:			Date

To be Completed by your Bank

For SCAQMD Use Only

Input By

Announcing the

South Coast Air Quality Management District's

Funding for Support Service Providers at SCAQMD's Lawn Mower Exchange Program

Program Announcement

#PA2016-07

March 4, 2016

DATE:	March 4, 2016
то:	All Interested Parties
FROM:	Barry Wallerstein, Executive Officer, SCAQMD
SUBJECT:	SCAQMD Program Announcement for Support Service Providers at SCAQMD's Lawn Mower Exchange Events

The South Coast Air Quality Management District (SCAQMD) is pleased to announce a funding opportunity for Support Service Providers at the Lawn Mower Exchange events in the fall of 2016. This Program Announcement is designed to identify potential support service providers with the capacity of providing staff for unloading gas powered lawn mowers from vehicles at the drive-thru Lawn Mower Exchange events, and also the necessary equipment and staff to direct traffic at these events. Contracts may be awarded to multiple entities. All interested parties are encouraged to apply. The required tasks are listed in Section D.

The SCAQMD staff is available to assist applicants during the preparation of their applications for this program. Points of contact for administrative and technical assistance are included in the attached Program Announcement in Section F.

Should you have any questions regarding this Program Announcement, please contact Mr. Vasken Yardemian, Senior Staff Specialist, at (909) 396-3296. The Announcement and Application documents can also be accessed via the Internet by visiting SCAQMD's website at <u>http://www.aqmd.gov/</u>.

Our main objective is to reduce exposure to harmful emissions from the use of gasolinepowered lawn mowers in the South Coast Air Basin and we look forward to receiving your application.

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	Required Tasks	3
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A. LAWN MOWER EXCHANGE PROGRAM OVERVIEW

The purpose of this Program Announcement is to solicit competitive proposals from support service providers with the capacity of providing staff for unloading gas powered lawn mowers from vehicles at the SCAQMD's drive-thru Lawn mower Exchange events, and also the necessary equipment and staff to direct traffic at these events. The goal of this proposal is to identify potential vendors for SCAQMD's 2016 Lawn Mower Exchange Program at the lowest possible price. Contracts may be awarded to multiple entities.

The successful bidders should be able to provide the required staff to unload lawn mowers at SCAQMD's Lawn Mower Exchange events, provide the required equipment and staff to direct traffic at these events.

B. PROGRAM SCHEDULE

The implementation schedule of this program is illustrated below

March 4, 2016	Issue the Program Announcement & Application #PA2016-07
April 15, 2016	Applications due no later than 1:00 PM
May 20, 2016	Proposals approved by Mobile Source Committee
June 3, 2016	Proposals approved by Board
July 15, 2016	Contract Execution
December 31, 2016	Completion of Program

C. APPLICATION SUBMITTAL

The applicant shall submit <u>four copies</u> of the application and the project proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the applicant and the words "Program Application #PA2016-07. All applications for the Lawn Mower Exchange Program Support Service Providers/ are due no later than 1:00 p.m., April 15, 2016.

Procurement Unit South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA. 91765

The written proposals must be received by SCAQMD by the specified date and time regardless of when they may be postmarked for delivery. Email and faxed copies will not be accepted.

D. PARTICIPATION GUIDELINES, REQUIREMENTS, & CONDITIONS

Amounts of Funding

The amount of SCAQMD funding will be determined at a later date prior to the scheduling of lawn mower exchange events

Proposal Requirements

The South Coast Air Quality Management District (SCAQMD) is pleased to announce a funding opportunity for providing Support Service Providers in connection with SCAQMD's Lawn Mower Exchange Program in the fall of 2016. The lawn mower exchange programs are drive-thru events where pre-registered customers bring their old operable gas mowers and exchange them for cordless electric lawn mowers for a subsidized price. The winning bidder will provide the required staff to unload lawn mowers from participant vehicles, and also provide staff and equipment to direct traffic at these Lawn Mower Exchange evens. SCAQMD anticipates holding up to five events in the fall of 2016 and intends to offer up to 3,000 lawn mowers for exchange at these events. If additional State funds become available larger quantities may be exchanged.

Required Tasks

The Tasks required of a successful bidder are as follows:

- Task 1: On the day of the Lawn Mower Exchange, arrive at the event site two hours early with required equipment like traffic cones, caution tape and barricades. CONTRACTOR shall place traffic cones, barricades, signage as directed SCAQMD project officer on site. SCAQMD shall inform CONTRACTOR of the date, time and location for each Lawn Mower Exchange event as soon as possible. However, SCAQMD has the right to cancel at any time any or all scheduled events. CONTRACTOR shall not be paid for a cancelled event.
- Task 2:During the event, CONTRACTOR shall unload the old gas mowers from
participant vehicles and hand them over to the licensed scrapper on site.
CONTRACTOR will also provide traffic directors to ensure smooth flow of
traffic.
- Task 3: At the end of the event, CONTRACTOR shall make sure all equipment is picked up and the area is kept clean of any debris from the event.

Proposals from Support Service Providers should include but not limited to the following:

- Demonstrated experience in performing similar services at large public events
- Experience in events conducted in Los Angeles, Orange, San Bernardino and Riverside Counties
- Hourly rate per mower handler
- Hourly rate per traffic director
- Rental rate for traffic cones/tape
- Rental rate for A-frame barricades for signage

Insurance Requirements:

To be eligible the successful bidder shall:

- Furnish evidence to SCAQMD of workers' compensation insurance for each of its employees, in accordance with either California or other states' applicable statutory requirements prior to commencement of any work;
- Furnish evidence to SCAQMD of general liability insurance with a limit of at least \$1,000,000 per occurrence, and \$2,000,000 in a general aggregate prior to commencement of any work on the Contract. SCAQMD shall be named as an additional insured on any such liability policy, and thirty (30) days written notice prior to cancellation of any such insurance shall be given to SCAQMD;
- Furnish evidence to SCAQMD of automobile liability insurance with limits of at least \$100,000 per person and \$300,000 per accident for bodily injuries, and \$50,000 in property damage, or \$1,000,000 combined single limit for bodily injury or property damage, prior to commencement of any work on this Contract. SCAQMD shall be named as an additional insured on any such liability policy, and thirty (30) days written notice prior to cancellation of any such insurance shall be given to SCAQMD.

• Furnish evidence to SCAQMD of Professional Liability Insurance with an aggregate limit of not less than \$5,000,000.

Company Contact

Bidders shall provide the company's contact person's name, address, phone numbers and the email address.

E. PROJECT IMPLEMENTATION

Project Selection

Contractor(s) will be selected based on, but not limited to, the following criteria:

- Meet insurance requirements listed in Section D
- Be able to provide trained staff to unload lawn mowers from participant vehicles
- Be able to provide assistance with signage and traffic flow at the event

F. IF YOU NEED HELP

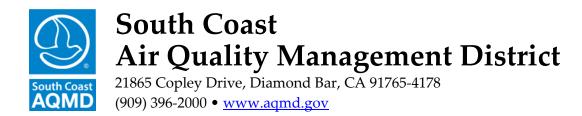
This Program Announcement and Application can be obtained by accessing the SCAQMD web site at <u>http://www.aqmd.gov/</u>. SCAQMD staff members are available to answer questions during the application acceptance period. In order to help expedite assistance, please direct your inquiries to the applicable staff person, as follows:

• For General, Administrative, or Technical Assistance, please contact:

Vasken Yardemian Senior Staff Specialist Phone: 909-396-3296 Fax: 909-396-3632 vyardemian@aqmd.gov

ATTACHMENT A

CERTIFICATIONS AND REPRESENTATIONS



Business Information Request

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

If you do not return this information, we will <u>not</u> be able to establish you as a vendor. This will delay any payments and would <u>still</u> necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Michael B. O'Kelly Chief Financial Officer

DH:tm

Enclosures: Business Information Request Disadvantaged Business Certification W-9 Form 590 Withholding Exemption Certificate Federal Contract Debarment Certification Campaign Contributions Disclosure Direct Deposit Authorization



BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business Check One:	 Individual DBA, Name, County Filed in Corporation, ID No LLC/LLP, ID No Other

REMITTING ADDRESS INFORMATION

Address										
Address										
City/Town										
State/Province					Zip					
Phone	()	-	Ext	Fax	()	-		
Contact					Title					
E-mail Address										
Payment Name if Different										

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

Attention: Accounts Payable, Accounting Department South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765-4178

BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE),

minoritybusiness enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below <u>for contracts or purchase orders funded in whole</u> <u>or in part by federal grants and contracts</u>.

- 1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
- 2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
- 3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
- 4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
- 5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
- 6. If subcontracts are to be let, take the above affirmative steps.

<u>Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with</u> <u>SCAQMD Procurement Policy and Procedure:</u>

Check all that apply:					
 Small Business Enterprise/Small Business Joint Venture Local business Minority-owned Business Enterprise 	 Women-owned Business Enterprise Disabled Veteran-owned Business Enterprise/DVBE Joint Venture Most Favored Customer Pricing Certification 				
Percent of ownership:%					
Name of Qualifying Owner(s):					
State of California Public Works Contractor Registration No MUST BE NCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.					

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

NAME

TITLE

TELEPHONE NUMBER

DATE

Definitions

Disabled Veteran-Owned Business Enterprise means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

Joint Venture means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

Local Business means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

Minority-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

"Minority" person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

Small Business Enterprise means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
 - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
 - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

Small Business Joint Venture means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

Women-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

Most Favored Customer as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

	 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. 			
page 2.	2 Business name/disregarded entity name, if different from above			
6	Check appropriate box for federal tax classification; check only one of the following seven boxes: Individual/sole proprietor or C Corporation S Corporation Partnership single-member LLC	Trust/estate	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):	
tion	Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partners	hip) 🕨	Exempt payee code (if any)	
r S	Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in	the line above for	Exemption from FATCA reporting	
nst it	the tax classification of the single-member owner.		code (if any)	
<u>و</u> ک	Other (see instructions) >	D	(Applies to accounts maintained outside the U.S.)	
Print or type Specific Instructions	5 Address (number, street, and apt. or suite no.)	Hequester's name a	and address (optional)	
See S	6 City, state, and ZIP code			
	7 List account number(s) here (optional)			
Par	t Taxpayer Identification Number (TIN)			
backu reside entitie	your TIN in the appropriate box. The TIN provided must match the name given on line 1 to av up withholding. For individuals, this is generally your social security number (SSN). However, fi ent alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other es, it is your employer identification number (EIN). If you do not have a number, see <i>How to ge</i> n page 3.	ora		
	identification number			
guide	If the account is in more than one name, see the instructions for line 1 and the chart on page lines on whose number to enter.	4 lor	-	
Par	t I Certification			
Under	r penalties of periury. I certify that:			

- 1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- 2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- 3. I am a U.S. citizen or other U.S. person (defined below); and
- 4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign	Signature of
Here	U.S. person 🕨

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted. Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- · Form 1099-DIV (dividends, including those from stocks or mutual funds)
- · Form 1099-MISC (various types of income, prizes, awards, or gross proceeds) · Form 1099-B (stock or mutual fund sales and certain other transactions by
- brokers)
- · Form 1099-S (proceeds from real estate transactions)
- · Form 1099-K (merchant card and third party network transactions)

Date

- · Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- · Form 1099-C (canceled debt)
- · Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN
- If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.
- By signing the filled-out form, you:
- 1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued)
- 2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

 Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See What is FATCA reporting? on page 2 for further information.

Cat. No. 10231X

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

· An individual who is a U.S. citizen or U.S. resident alien;

 A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;

· An estate (other than a foreign estate); or

A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

 In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;

 In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and

 In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

 The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that gualifies for the exemption from tax.

 Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

 You do not certify your TIN when required (see the Part II instructions on page 3 for details), 3. The IRS tells the requester that you furnished an incorrect TIN,

 The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

 You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See Exempt payee code on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see Special rules for partnerships above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See Exemption from FATCA reporting code on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; do not leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. Individual. Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. Sole proprietor or single-member LLC. Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation. Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. Other entities. Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. Disregarded entity. For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the entry person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. IN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

 Generally, individuals (including sole proprietors) are not exempt from backup withholding.

 Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.

 Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

 Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2-The United States or any of its agencies or instrumentalities

3-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5-A corporation

6-A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8-A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10-A common trust fund operated by a bank under section 584(a)

11-A financial institution

12-A middleman known in the investment community as a nominee or custodian

13-A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for	THEN the payment is exempt for		
Interest and dividend payments	All exempt payees except for 7		
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.		
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4		
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²		
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4		

¹See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B-The United States or any of its agencies or instrumentalities

C-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E-A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G-A real estate investment trust

H — A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I-A common trust fund as defined in section 584(a)

J-A bank as defined in section 581

K-A broker

L-A trust exempt from tax under section 664 or described in section 4947(a)(1) M-A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.ssa.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an TIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-82-93676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see Exempt payee code earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
 Individual Two or more individuals (joint account) 	The individual The actual owner of the account or, if combined funds, the first individual on the account'
 Custodian account of a minor (Uniform Gift to Minors Act) 	The minor ²
 a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law 	The grantor-trustee' The actual owner'
Sole proprietorship or disregarded entity owned by an individual	The owner ^a
 Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i) (A)) 	The grantor*
For this type of account:	Give name and EIN of:
 Disregarded entity not owned by an individual 	The owner
8. A valid trust, estate, or pension trust	Legal entity ⁴
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
 Association, club, religious, charitable, educational, or other tax- exempt organization 	The organization
11. Partnership or multi-member LLC	The partnership
 A broker or registered nominee 	The broker or nominee
 Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments 	The public entity
 Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i) (B)) 	The trust

¹List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

Circle the minor's name and furnish the minor's SSN.

- ³You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.
- ⁴List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see Special rules for partnerships on page 2. *Note. Grantor also must provide a Form W-9 to trustee of trust

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

- To reduce your risk:
- · Protect your SSN,
- · Ensure your employer is protecting your SSN, and
- · Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card. bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

|--|

YEAR

With he al alla ------.

CALIFORNIA FORM

-

	2015 Withholding Exemption Certific	ale	590
The	e payee completes this form and submits it to the withholding agent.		
	hholding Agent (Type or print)		
Vam	ne		
2011		<u></u>	
Pay Nam			
venn	iu Iu	SSN or ITIN FEIN CA Co	orp no. LLI CA SOS file no
\ \ddr	ress (apt./ste., room, PO Box, or PMB no.)		
City	(If you have a foreign address, see instructions.)	State ZIP Code	
xei	mption Reason		
	eck only one reason box below that applies to the payee.		
	checking the appropriate box below, the Payee certifies the reason for uirements on payment(s) made to the entity or individual.	the exemption from the California income tax	x withholding
	Individuals — Certification of Residency: I am a resident of California and I reside at the address shown a notify the withholding agent. See instructions for General Informa		I will promptly
	Corporations: The corporation has a permanent place of business in California California Secretary of State (SOS) to do business in California. corporation ceases to have a permanent place of business in Ca the withholding agent. See instructions for General Information D	The corporation will file a California tax return alifornia or ceases to do any of the above, I w	n. If this
	Partnerships or Limited Liability Companies (LLCs): The partnership or LLC has a permanent place of business in Ca California SOS, and is subject to the laws of California. The partr or LLC ceases to do any of the above, I will promptly inform the partnership (LLP) is treated like any other partnership.	nership or LLC will file a California tax return.	If the partnershi
	Tax-Exempt Entities: The entity is exempt from tax under California Revenue and Taxa Internal Revenue Code Section 501(c) (insert number). If the withholding agent. Individuals cannot be tax-exempt entities.	this entity ceases to be exempt from tax, I wi	nsert letter) or ill promptly notify
	Insurance Companies, Individual Retirement Arrangements (IRA The entity is an insurance company, IRA, or a federally qualified		ans:
	California Trusts: At least one trustee and one noncontingent beneficiary of the ab California fiduciary tax return. If the trustee or noncontingent ben notify the withholding agent.		
	Estates — Certification of Residency of Deceased Person: I am the executor of the above-named person's estate or trust. The estate will file a California fiduciary tax return.	he decedent was a California resident at the	time of death.
	Nonmilitary Spouse of a Military Servicemember: I am a nonmilitary spouse of a military servicemember and I mea requirements. See instructions for General Information E, MSRR		MSRRA)
E	RTIFICATE OF PAYEE: Payee must complete and sign below.		
	der penalties of perjury, I hereby certify that the information provided in	n this document is, to the best of my knowled	ge, true and
	rect. If conditions change, I will promptly notify the withholding agent.		5,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
or	vee's name and title (type or print)	Telephone ()	

2015 Instructions for Form 590

Withholding Exemption Certificate References in these instructions are to the California Revenue and Taxation Code (R&TC).

General Information

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For information on California backup withholding, go to **ftb.ca.gov** and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to edd.ca.gov or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a **Seller of California real estate**. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from real estate withholding.

The following are excluded from withholding and completing this form:

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.

- Payments to nonresidents for royalties from activities sourced to California.
- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year. For more information on withholding get

FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed certificate on the preprinted form, the withholding agent may accept as a substitute certificate a letter from the payee explaining why the payee is not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number. The withholding agent must retain a copy of the certificate or substitute for at least four years after the last payment to which the certificate applies, and provide it upon request to the FTB.

For example, if an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

D Definitions

For California non-wage withholding purposes, nonresident includes all of the following:

- Individuals who are not residents of Onliferation
- California. • Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.
 Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or if it is a foreign corporation qualified to transact intrastate business by the CA SOS. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

Domicile is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

Specific Instructions

Pavee Instructions

Enter the withholding agent's name

Enter the payee's information, including the taxpayer identification number (TIN) and check the appropriate TIN box.

You must provide an acceptable TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

Private Mail Box (PMB) - Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123

Foreign Address – Enter the information in the following order: City, Country, Province/ Region, and Postal Code. Follow the country's practice for entering the postal code. Do not abbreviate the country's name.

Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

Withholding Agent Instructions

Keep Form 590 for your records. Do not send this form to the FTB unless it has been specifically requested.

For more information, contact Withholding Services and Compliance, see Additional Information.

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- · The corporation ceases to have a permanent place of business in California or ceases to
- be qualified to do business in California. The partnership ceases to have a permanent
- place of business in California The LLC ceases to have a permanent place
- of business in California.
- The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

Additional Information

For additional information or to speak to a representative regarding this form, call the Withholding Services and Compliance telephone service at: Telephone: 888.792.4900 916.845.4900

916.845.9512 Fax: OR write to:

WITHHOLDING SERVICES AND COMPLIANCE MS F182 FRANCHISE TAX BOARD PO BOX 942867 SACRAMENTO CA 94267-0651

You can download, view, and print California tax forms and publications at ftb.ca.gov.

OR to get forms by mail write to:

TAX FORMS REQUEST UNIT FRANCHISE TAX BOARD PO BOX 307 RANCHO CORDOVA CA 95741-0307

For all other questions unrelated to withholding or to access the TTY/TDD numbers, see the

information below.

Internet and Telephone Assistance

Website:	ftb.ca.gov
Telephone:	800.852.5711 from within the
	United States
	916.845.6500 from outside the
	United States
TTY/TDD:	800.822.6268 for persons with

hearing or speech impairments Asistencia Por Internet y Teléfono

- Sitio web: **ftb.ca.gov** Teléfono: 800.852.5711 dentro de los Estados Unidos 916.845.6500 fuera de los Estados Unidos
- 800.822.6268 para personas con TTY/TDD: discapacidades auditivas o del habla

Page 2 Form 590 Instructions 2014



CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor *plus* contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website (<u>www.aqmd.gov</u>). The list of current MSRC members/alternates can be found at the MSRC website (<u>http://www.cleantransportationfunding.org</u>).

<u>SECTION I.</u>

Contractor (Legal Name): _____

DBA, Name_____, County Filed in_____

Corporation, ID No._____

LLC/LLP, ID No.

List any parent, subsidiaries, or otherwise affiliated business entities of Contractor: *(See definition below).*

SECTION II.

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes No If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.

Campaign Contributions Disclosure, continued:

Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
Name of Contributor		
Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution

I declare the foregoing disclosures to be true and correct.

By:_____

Title:_____

Date:_____

		DEFINITIONS
		Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)
(1)		t subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing than 50 percent of the voting power of another corporation.
(2)	organi	wise related business entity. Business entities, including corporations, partnerships, joint ventures and any other izations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if ne of the following three tests is met:
	(A)	One business entity has a controlling ownership interest in the other business entity.
	(B)	There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:
		 (i) The same person or substantially the same person owns and manages the two entities; (ii) There are common or commingled funds or assets; (iii) The business entities share the use of the same offices or employees, or otherwise share activities, resources or
		personnel on a regular basis;
		(iv) There is otherwise a regular and close working relationship between the entities; or
	(C)	A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.



Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

Individual (Employee, Governing Board Member)
 Vendor/Contractor

Vendor/
 Change

Changed Information

New RequestCancel Direct Deposit

STEP 2: Payee Information

Last Name	First Name		Middle Initial	Title	
Vendor/Contractor Business Name (if applicable)					
Address			Apartment or P.O	. Box Number	
City		State	Zip	Country	
Taxpayer ID Number	Telephone Number		 E	Email Address	

Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- 2. This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

<u>STEP 3</u>:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

ere	Name of Bank/Institution					
Staple Voided Check Here	Account Holder Name(s)					
	Saving Checking	Account Number		Routing Number		
	Bank Representative Printed Name		Bank Representative Signature		Date	
	ACCOUNT HOLDER SIGNATURE:				Date	

To be Completed by your Bank

For SCAQMD Use Only

Input By

1 Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 9

- PROPOSAL: Recognize Revenue and Appropriate Funds to Develop Low-Cost Sensor Network for Monitoring PM Emissions from Waste Disposal and Recycling Facility
- SYNOPSIS: SCAQMD and Rainbow Transfer/Recycling Inc. (Rainbow) have entered into a Stipulated Order for Abatement to resolve their dispute over application of Rule 410 and to achieve compliance with the Rule's enclosure requirement. Pursuant to the agreement set forth in the Stipulated Order for Abatement, Rainbow contributed \$40,000 to SCAQMD's General Fund for an air monitoring study to measure potential fugitive PM emissions from the facility using low-cost sensors. This action is to recognize \$40,000 in revenue into the General Fund and appropriate this amount to the Science & Technology Advancement Budget to support the development and implementation of a PM monitoring sensor network.
- COMMITTEE: Technology, February 19, 2016; Recommended for Approval

RECOMMENDED ACTION:

Recognize revenue of \$40,000 into the General Fund and appropriate this amount from the General Fund Unassigned (Undesignated) Fund Balance into Science & Technology Advancement's FY 2015-16 and/or FY 2016-17 Budget (Org 43), Services and Supplies Major Object, Small Tools, Instruments, Equipment Account.

E	Barry R.	Wallerstein,	D.Env.
E	Executiv	e Officer	

MMM:LT:AP

Background

Rainbow Transfer/Recycling Inc. (Rainbow) is a waste disposal and recycling facility located in Huntington Beach that operates within the jurisdiction of the SCAQMD. SCAQMD has issued several Notices of Violation (NOVs) to Rainbow for creating a public nuisance from odor and potential fugitive PM emissions, for not conducting part of their operations under a required enclosure, and, more specifically, for allegedly violating District Rules 402 and 410 and Health and Safety Code Section 41700. SCAQMD and Rainbow have entered into a Stipulated Order for Abatement to resolve the NOVs received. One of the agreements set forth in the Stipulated Order for

Abatement requires Rainbow to contribute \$40,000 to SCAQMD's General Fund for an air monitoring study to measure potential fugitive PM emissions using low-cost sensors.

Through the recently established AQ-SPEC Program, SCAQMD has been systematically testing and evaluating a multitude of low-cost sensors. This work has allowed staff to identify several potential PM sensors to be used in a fenceline monitoring demonstration.

Proposal

This action is to recognize \$40,000 in revenue into the General Fund and appropriate this amount into Science & Technology Advancement's FY 2015-16 and/or FY 2016-17 Budget to support the development and implementation of a PM monitoring sensor network. The objective of this study is to design and deploy a fenceline PM monitoring network near and around the Rainbow facility. This will provide the operator and SCAQMD with real-time feedback on potential fugitive PM emissions originating from the facility and an opportunity to optimize ongoing PM control efforts.

A small network of up to 15 sensors will be deployed upwind, downwind and at the fenceline of the Rainbow facility to monitor potential fugitive PM emissions from onsite activities. All sensor devices (nodes) will be installed at secure locations inside or outside the facility perimeter, tied to light poles or deployed at other private and public places nearby. Each sensor node will have one Alphasense OPC-N2 particle counter, or similar PM sensor, for measuring PM1, PM2.5 and PM10 and will be powered either using solar panels or by connecting it to a power source. Staff proposes a 900 MHz wireless mesh network to connect sensor nodes to each other and to a central server for data storage and processing. Data will be monitored in real time at one-minute time resolution and email alerts will be sent to SCAQMD staff when PM levels exceed a predefined threshold.

Benefits to SCAQMD

This work will provide detailed monitoring information on potential PM emissions from Rainbow, allow mapping of real-time ambient PM levels from the facility, and optimize the efficacy of PM control efforts with the ultimate goal of ensuring improved compliance, better air quality and reduced complaints from neighboring communities. Additionally, it will serve as a template for developing future air monitoring networks based on low-cost sensor technology for other stationary sources and provide real-time feedback on the efficiency of mitigation efforts undertaken.

Resource Impacts

Sufficient funding for this effort is available from the Stipulated Order for Abatement between Rainbow and SCAQMD and shall be recognized into the General Fund and appropriated into Science & Technology Advancement's FY 2015-16 and/or FY 2016-17 Budget, Services and Supplies Major Object, upon Board approval.

Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 10

- PROPOSAL: Approve Implementation of Three Additional Incentive Programs, Amend Existing Contract, Expand Implementation Areas, and Allocate Funds for Implementation of U.S. EPA's Targeted Air Shed Grant
- SYNOPSIS: On March 4, 2011, the Board approved funding allocations from U.S. EPA's Targeted Air Shed Grant Program for \$2,913,123 to implement incentive programs to reduce criteria pollutant emissions in the two Clean Communities Plan pilot areas of Boyle Heights and San Bernardino. This action is to use the approximately \$800,000 remaining to: 1) implement an incentive program for \$236,089 that will allow the Executive Officer to reimburse government and non-profit organizations that install electric vehicle charging equipment and/or solar panels to support electric vehicle charging equipment; 2) implement an incentive program to replace pre-1987 school buses with CNG buses and associated infrastructure, if requested, at a cost not to exceed \$180,000 per school bus at Los Angeles Unified School District ; 3) implement an incentive program for \$40,000 to reimburse government and non-profit organizations that purchase commercial cordless electric yard equipment; 4) modify an existing contract with Mean Green Products, LLC by an amount not to exceed \$150,000 to expand the pilot program to purchase additional commercial electric lawn mowers in Western Riverside County for government agencies; and 5) expand implementation of the above incentive programs to include San Bernardino, Boyle Heights, Western Riverside County, and beyond to other environmental justice communities in Orange County and throughout the Basin if needed.

COMMITTEE: Mobile Source, February 19, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

1. Authorize the Executive Officer to implement an incentive program for \$236,089 from the Advanced Technology, Outreach, and Education Fund (17) to reimburse

government and non-profit organizations that install electric vehicle charging equipment and/or solar panels to support electric vehicle charging equipment;

- 2. Authorize the Chairman to execute a contract with the Los Angeles Unified School District (LAUSD) for the replacement of up to four pre-1987 school buses. Each pre-1987 school bus would be replaced with a CNG bus at a cost not to exceed \$180,000 per school bus and associated infrastructure, if needed, from the Advanced Technology, Outreach, and Education Fund (17);
- 3. Authorize the Executive Officer to implement an incentive program for \$40,000 from the Advanced Technology, Outreach, and Education Fund (17) to reimburse government and non-profit organizations that purchase commercial cordless electric handheld landscape equipment;
- 4. Authorize the Chairman to modify an existing contract with Mean Green Products, LLC to increase funding by an amount not to exceed \$150,000 from the Advanced Technology, Outreach, and Education Fund (17) to expand the pilot program to purchase additional commercial electric lawn mowers in Western Riverside County for government agencies; and
- 5. Authorize the Executive Officer to expand implementation of the above incentive programs to include San Bernardino, Boyle Heights, Western Riverside County, and beyond to other environmental justice communities in Orange County and throughout the Basin if needed.

Barry R. Wallerstein, D.Env. Executive Officer

PF:SN:MM

Background

On March 4, 2011, the Board approved funding allocations from U.S. EPA's Targeted Air Shed Grant Program for \$2,913,123 for eight incentive programs for the reduction of toxic air contaminants and criteria air pollutants in the two Clean Communities Plan pilot areas of Boyle Heights and San Bernardino. Over the duration of this grant, the Board has approved several modifications to programs under the Targeted Air Shed Grant. On February 5, 2016, the Board approved reallocating funds to implement aqueous brake cleaners for auto repair shops and the commercial electric lawn mower project. Staff has worked with U.S. EPA and identified additional projects that can be implemented with the remaining funds of approximately \$800,000. Implementation of the Air Shed Grant will continue to focus on the original Clean Community pilot areas of San Bernardino and Boyle Heights, and will expand to Western Riverside County. If demand for incentive programs is low in these three areas, the SCAQMD staff will further expand into other environmental justice areas throughout the Basin to ensure timely implementation and completion of the Targeted Air Shed Grant.

Proposal

Staff is proposing to implement three additional incentive programs: 1) Reimbursement for installation of electric vehicle charging equipment; 2) Replacement of pre-1987 school buses with CNG buses; and 3) Reimbursement for commercial cordless electric handheld landscape equipment. In addition, staff is also proposing to modify an existing contract to expand the pilot program for commercial electric lawn mowers. Implementation of incentive programs will continue to focus on San Bernardino and Boyle Heights and then will expand to include Western Riverside County. After incentives are offered in these areas, if funds remain available, the implementation area will be further expanded to other environmental justice communities in Orange County and throughout the Basin. A description of each of these incentive programs is provided below.

Reimbursement for Installation of Electric Vehicle Charging Equipment Staff is recommending to allocate \$236,089 to incentivize deployment of plug-in electric vehicle (PEV) infrastructure including charging stations, installation costs, and solar panels. Organizations utilizing the incentive would be reimbursed for equipment and installation costs, including hardware, electrical upgrades and associated construction, for up to \$5,000 per charger for sites with less than 2 percent of the parking stalls designated for PEVs and up to \$7,500 per charger for sites with 2 percent or more of the parking stalls designated for PEVs. For projects that include solar panels that are associated with the PEVs, applicants would be eligible for up to an additional \$5,000 for the solar panels per site. Grant funds would be limited to no more than \$42,500 per site. Because of high anticipated installation costs, it is expected that the funding would not cover all associated costs and it will be necessary for participants to provide cofunding. Some cofunding may come from utility programs that may also provide PEV infrastructure incentives.

This program would be available for government agencies and non-profit organizations. SCAQMD staff will conduct a focused outreach starting with San Bernardino, Boyle Heights and Western Riverside County. Where appropriate, staff will partner with other agencies and organizations to notify potential entities of this program incentive. If needed, outreach will be expanded to other environmental justice areas in Orange County and throughout the Basin.

Replacement of Pre-1987 School Buses

At its March 6, 2015 meeting, the Board approved the issuance of a program announcement for the replacement of pre-1994 school buses and interest from public school districts exceeded available funding. As part of this program, priority was given to replace pre-1987 buses. On October 2, 2015, the Board approved contracts to fund the replacement of pre-1987 requests from all school districts with the exception of LAUSD, due to the high number of pre-1987 school buses. Staff is recommending that the Chairman approve a contract with LAUSD to replace up to four pre-1987 school

buses. LAUSD is required to provide \$15,000 per CNG bus in co-funding. SCAQMD will provide up to \$162,000 for a new CNG bus. In addition, the SCAQMD will pay \$4,500 per bus for the option of fire suppressant. Furthermore, infrastructure funding of \$13,500 per CNG bus is recommended, if requested by LAUSD. A minimum of one bus will be funded for replacement and up to four buses would be replaced if there are remaining grant funds after implementation of the other incentive programs.

Reimbursement for Commercial Cordless Electric Handheld Landscape Equipment

Under the Targeted Air Shed Grant, the Board approved a pilot project on December 5, 2014 to provide commercial electric lawn mowers to government agencies and non-profit organizations in San Bernardino. This incentive program would extend the pilot program to offer those agencies and organizations that are participating in the pilot program to be reimbursed for the purchase of commercial cordless electric handheld landscape equipment. The Executive Officer will allocate \$40,000 from the Air Shed Grant to reimburse the pilot project participants up to \$1,200 per leaf blower, \$400 per hedge trimmer, \$400 per weed trimmer and \$400 per chain saw. All equipment must be cordless, electric and commercial-grade. Participants will once again be required to provide performance data to evaluate the performance of the equipment.

Expand the Pilot Program for Commercial Electric Lawn Mowers

To implement the pilot project for commercial electric lawn mowers, the Board approved a contract with Mean Green Products, LLC for the purchase, delivery, training and warranty of this equipment. This pilot project has been successful in the City of San Bernardino and at the January 8, 2016 Board meeting, the pilot program was extended to the City of Colton. Staff is recommending that this pilot project be further expanded to government agencies in Western Riverside County and that the contract with Mean Green Products be increased to \$150,000 for a total of \$565,838.

Allocation of Funds

Based on the revisions to proposed incentive programs above, and previously approved incentive programs, staff is recommending that the U.S. EPA Targeted Air Shed Grant funds be allocated as shown in Table 1 below. On January 8, 2016, the Board authorized the Executive Officer to move funds between approved incentive programs, based on their demand, to ensure the remaining \$800,000 is fully utilized in a timely manner.

Table 1 – 0.5. ETA Targeteu An Sneu Grant Anocations Status of Incentive					
Program	Allocation	Program			
Air Filtration in Schools	\$528,798	Completed			
Architectural Coating Rebates	\$9,369	Completed			
Auto Refinishing Spray Equipment	\$14,628	Completed			
Boiler Efficiency Upgrades	\$100,000	Completed			
Commercial Green Cleaners	\$0	Completed			
Cordless Electric Residential Mowers	\$777,146	Completed			
Weatherization of Homes	\$200,000	Near Completion			
Aqueous Brake Washers for Auto Repair	\$60,000	Still Implementing			
Wood Stove/Fireplace Gas Log Buy Down	\$26,255	Still Implementing			
Commercial Electric Lawn Mowers	\$565,838	Still Implementing, Adding \$150,000			
EV Charging and Installation	\$236,089	New			
CNG School Buses	\$180,000	New			
Commercial Cordless Electric Handheld Landscape Equipment	\$40,000	New			
Administrative	\$175,000	Completed			
Total:	\$2,913,123				

Table 1 – U.S. EPA Targeted Air Shed Grant Allocations

Benefits to SCAQMD

The proposal supports the implementation of the Clean Communities Plan to identify strategies to reduce emissions and exposure to criteria and toxic pollutants and ultrafine PM, help residents accelerate clean air efforts in these communities, and help offset the costs of pollution reduction strategies while also promoting more livable neighborhoods.

Resource Impacts

The proposed actions will not have an impact on SCAQMD financial resources. Funding will be provided under the U.S. EPA Targeted Air Shed grant program recognized by the Board on March 4, 2011 which are available in the Advanced Technology, Outreach, and Education Fund (17).

1 Back to Agenda

BOARD MEETING DATE: March 4, 2016 AGENDA NO. 11

- PROPOSAL: Transfer and Appropriate Funds and Issue Purchase Order for Field Monitoring Equipment
- SYNOPSIS: This action is to transfer and appropriate funding to Engineering & Compliance's FY 2015-16 Budget and to issue a purchase order for purchase of an infrared camera for monitoring and recording of hydrocarbon emissions from various processes, including but not limited to, refineries, oil and gas field production and storage sites and other petroleum related operations.
- COMMITTEE: Administrative, February 12, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

- Transfer and appropriate funding of \$17,000 to the Engineering and Compliance FY 2015-16 Budget, Capital Outlays Major Object, and \$133,000 to Services and Supplies Major Object, Training Account from the AES Settlement Projects Fund (35).
- 2. Authorize the Procurement Manager to issue a purchase order to FLIR Commercial Systems for a GF320 FLIR camera for a not-to-exceed amount of \$150,000.

Barry R. Wallerstein, D.Env. Executive Officer

MN:MB

Background

The SCAQMD Engineering and Compliance staff currently utilizes various field monitoring equipment to enhance their field inspection and better identify sources of emissions and types of emissions. One of the monitoring equipment used is an infrared camera.

SCAQMD currently utilizes a Forward Looking Infrared (FLIR) camera for the purposes of visually detecting leaks and fugitive hydrocarbon emissions which are not visible to the naked eye from various emission sources. The FLIR camera is an invaluable asset for compliance staff to locate leaks and fugitive emissions utilizing the gas detection, imaging and recording features of the camera. The agency's current FLIR camera is a ThermoCAMTM and was obtained as part of a 10-year equipment lease agreement set forth in 2006 with Shell Oil Products. The current camera was modified in 2009 to be upgraded to meet the specifications of GasFindIRTM HSX. However, the lease agreement with Shell Oil will expire this year. Additionally, due to technological advancements, the newer models are smaller and lighter, and have more features.

A FLIR Camera is essential for field inspections because of the following features and benefits:

- 1. The FLIR camera utilizes proprietary telephoto lenses, infrared technology and thermal imaging to visually capture hydrocarbon emissions from oil refineries, oil and gas production and storage facilities, gasoline dispensing facilities and other petroleum sources as well as municipal landfills.
- 2. The newer FLIR cameras are portable and require minimal maintenance.
- 3. With the use of the FLIR camera, fugitive emissions are viewed in real time and can be recorded in the camera for easy archiving.
- 4. It is a quick non-contact measuring instrument and can be used in hard to access locations and also from a safe distance.
- 5. Using the camera saves inspection time using the camera as the inspector can identify areas that do not have any leaks or fugitive emissions from further action.

The Vendor offers and the SCAQMD has considered two different options (lease or purchase) for procuring the camera.

Lease Option - There is an option to lease/rent the camera from FLIR Commercial System and the costs associated are listed below:

Equipment	Quantity	Estimated Cost
Lease cost	1	
Twelve months @\$13,950/month (credit of half the rental amount is applied to the purchase of a new		\$167,400 (Credit towards
camera)		Purchase = \$83,700)
Twenty-four months @\$13,950/month (credit of half		\$334,800
the rental amount is applied to the purchase of a new camera)		(Credit towards Purchase = \$167,400)
Training		\$17,000
Total Cost for 1-2 Years Lease		\$184,400 -
		\$351,800

Purchase Option – The purchase option is evaluated based on a straight purchase or an initial leasing of 1-2 years and then purchasing the camera.

Equipment	Quantity	Estimated Cost
Purchase cost, training, and warranty	1	\$150,000
Purchase cost after 1-2 years of leasing (credit of half		\$223,800 -
the lease rental amount is applied to the purchase of a		\$307,500
new camera)		

Recommended Option – Based on the above cost comparison for leasing vs. straight purchasing, or purchasing after 1-2 years of leasing, a straight purchase is most cost effective.

Sole Source Justification

The SCAQMD Procurement Policy and Procedure, Section VIII (B.2) provides for waiver of formal bidding procedures under certain circumstances based upon documentation justifying a sole-source award.

Specifically, due to the urgent need to deploy this camera to identify and monitor leaks of natural gas at the Southern California Gas Company's Aliso Canyon underground natural gas storage facility, it is necessary that the procurement process be expedited in acquiring the GF320 Camera. Additionally, the GF320 is the only system that meets all of our application requirements for ease of use and seamless integration into our existing program. The GF320 model can detect the following gases at the minimum detected leak rates (MDLR) shown below:

Compound	MDLR	Compound	MDLR
Methane	0.8 gram/hr	Benzene	3.5 gram/hr
Butane	0.4 gram/hr	Ethane	0.6 gram/hr
Ethanol	0.7 gram/hr	Ethylbenzene	1.5 gram/hr
Ethylene	4.4 gram/hr	Heptane	1.8 gram/hr
Hexane	1.7 gram/hr	Isoprene	8.1 gram/hr
MEK	3.5 gram/hr	1-Pentene	5.6 gram/hr
Methanol	3.8 gram/hr	MIBK	2.1 gram/hr
Octane	1.2 gram/hr	Pentane	3.0 gram/hr

Proposal

SCAQMD staff seeks the approval of the Board to authorize the use of the AES Settlement Projects Fund (35) to purchase the following:

Equipment	Quantity	Estimated Cost
Purchase cost FLIR Model GF320 Camera with extended warranty and onsite training and certification	1	\$150,000
	Total	\$150,000

Resource Impacts

The amount of \$150,000 will be transferred from the AES Settlement Projects Fund (35), and appropriated to the Engineering & Compliance FY 2015-16 Budget.



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 12

- PROPOSAL: Approve SCAQMD Annual Investment Policy and Delegation of Authority to Appointed Treasurer to Invest SCAQMD Funds
- SYNOPSIS: State law requires a local government entity annually to provide a statement of investment policy for consideration at a public meeting and to renew its delegation of authority to its treasurer to invest and reinvest funds of the local agency.
- COMMITTEE: Investment Oversight, February 19, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

- 1. Approve the attached Annual Investment Policy.
- 2. Approve the attached resolution to renew delegation of authority to the Los Angeles County Treasurer to invest and reinvest SCAQMD funds.

	Barry R. Wallerstein, D.Env.	
	Executive Officer	
MBO:lg		

Background

Changes to the Government Code, which took effect in 1996, require that a statement of investment policy be transmitted annually to the Oversight Committee and legislative body of a local agency for consideration at a public meeting. In addition, state law (Gov't. Code Section 53607) requires that a local agency's legislative body annually renew its delegation of authority to its Treasurer to invest or to reinvest funds of the local agency.

Board action on April 12, 1996 approved a recommendation to minimize SCAQMD investments in the Los Angeles County Pooled Surplus Investment Portfolio (PSIP), by directing staff to work with the Los Angeles County Treasurer (SCAQMD's Treasurer) to make specific investments on behalf of SCAQMD. This change required the development of an annual statement of investment policy specific for SCAQMD.

SCAQMD's investment consultant, working with staff of SCAQMD and the Los Angeles County Treasurer's office, developed the attached statement of investment policy. This policy, which is reviewed annually for possible changes, sets forth the investment guidelines for SCAQMD with the objective of ensuring that funds are prudently invested to preserve principal and provide necessary liquidity while earning a market average rate of return.

Proposal

The Investment Policy was substantially revised in 2013, including updating credit requirements, revising maturity limits, and clarifying diversification guidelines and is being recommended to be updated for a new investment type allowed for in the California Government Code. Specifically, California Government Code Section 53601 was amended in 2015 to allow for investments in debt obligations of certain supranational institutions, including those obligations guaranteed by the International Bank for Reconstruction and Development, the International Finance Corporation, and the Inter-American Development Bank. The Los Angeles County Treasurer amended their investment policy and the Los Angeles County Board of Supervisors adopted the amendment in 2015 to allow for these investments. Therefore, a similar SCAQMD Investment Policy revision is being recommended for 2016.

The County of Los Angeles has provided treasury management services to the SCAQMD since inception of the District. These services include providing banking services, processing electronic payments to SCAQMD, and the investment of the SCAQMD's cash balances. Staff is recommending that the SCAQMD continue with the services provided by the Los Angeles County Treasurer.

Resource Impacts

Costs associated with SCAQMD treasury management operations are included in the FY 2015-16 Budget and will be included in the FY 2016-17 Budget.

Attachments

- 1. SCAQMD Annual Investment Policy
- 2. Resolution for Delegation of Authority to Appoint L.A. County Treasurer

South Coast Air Quality Management District

Annual Investment Policy

I. PURPOSE

This Annual Investment Policy (the "Policy") sets forth the investment guidelines for all general, special revenue, trust, agency and enterprise funds of the South Coast Air Quality Management District (SCAQMD). The objective of this Policy is to ensure all of SCAQMD's funds are prudently invested to preserve principal and provide necessary liquidity, while earning a market average rate of return.

SCAQMD funds deposited with the Los Angeles County Treasurer may only be invested in the Los Angeles County Pooled Surplus Investment Portfolio or in Special Purpose Investments as authorized by this Policy. The SCAQMD Annual Investment Policy conforms to the California Government Code (the Code) as well as customary standards of prudent investment management. Irrespective of these Policy provisions, should the provisions of the Code be or become more restrictive than those contained herein, such provisions will be considered immediately incorporated in this Policy and adhered to.

II. SCOPE

It is intended that this Policy cover all funds (except those funds invested in the two retirement systems covering SCAQMD employees and 457 deferred compensation plan funds) and investment activities under the direction of the SCAQMD and deposited with the Los Angeles County Treasurer.

The investment of bond proceeds will be governed by state law and the permitted investment provisions of relevant bond documents.

III. OBJECTIVES

The objectives of this Annual Investment Policy, in priority order, are SAFETY OF PRINCIPAL, LIQUIDITY, AND MARKET RATE OF RETURN.

1. <u>Safety of Principal</u>. The primary objective of SCAQMD is to reduce credit risk and interest rate risk to a level that is consistent with safe and prudent investment management. Credit risk is the risk of default or the inability of a debt issuer to make interest or principal payments when due. Credit risk is minimized by investing in only permitted investments and diversifying the portfolio according to this Annual Investment Policy so that no one type of issuer or issue will have a disproportionate impact on the portfolio. Interest rate risk is associated with price volatility introduced by extending the maturity of instruments purchased. Interest rate risk is controlled by limiting the maturity exposure to acceptable levels.

- 2. Liquidity. SCAQMD funds will be invested to ensure that normal cash needs and scheduled extraordinary cash needs can be met. Cash flow forecasting will be used to determine the current and projected future needs of SCAQMD and the ability of SCAQMD to make Special Purpose Investments. SCAQMD shall invest funds in instruments for which there is a secondary market and which offer the flexibility to be easily sold at any time with minimal risk of loss of either the principal or interest based upon then prevailing interest rates.
- 3. <u>Market Rate of Return</u>. SCAQMD's funds shall be invested to attain a market average rate of return through economic cycles consistent with maintaining risk at a prudent level.

These objectives are to be achieved in part through the diversification of SCAQMD investments among the Los Angeles County Pooled Surplus Investment Portfolio and Special Purpose Investments. The combination of the Pooled Surplus Investment Portfolio and the Special Purpose Investment of SCAQMD funds in the State of California Local Agency Investment Fund will provide significant diversification, safety of principal and liquidity for the programs of the SCAQMD. Other Special Purpose Investments in an SCAQMD separate account will experience market price changes due to interest rate risk consistent with longer maturity investments that are permitted by this policy.

IV. RESPONSIBILITIES

The Governing Board. The SCAQMD Governing Board is responsible for establishing the Annual Investment Policy and ensuring investments are made in compliance with this Policy. This Policy shall be reviewed annually by the Governing Board at a public meeting pursuant to Section 53646(g) of the California Government Code. The Los Angeles County Treasurer has been appointed Treasurer of SCAQMD. The Treasurer shall be appointed at least annually by the SCAQMD Governing Board.

The Treasurer. The Treasurer is responsible for making investments and for compliance with this Policy pursuant to the delegation of authority to invest funds or to sell or exchange securities made in accordance with Code Section 53607. The Treasurer shall submit a monthly report of investment transactions to the SCAQMD Governing Board. If the SCAQMD Governing Board appoints

as Treasurer someone other than the Los Angeles County Treasurer, the new Treasurer shall be responsible for making investments and for compliance with this Policy or such other Policy which may be adopted by the Governing Board at that time.

The Chief Financial Officer. The Chief Financial Officer, based on information provided by the Treasurer, shall submit a quarterly report to the Governing Board pursuant to Code Section 53646(g). The Chief Financial Officer is responsible for preparation of cash flow forecasts for SCAQMD funds as described below. The Chief Financial Officer will recommend specific individual investments for the Special Purpose Investments to be made by the Treasurer.

The Investment Oversight Committee. The SCAQMD Governing Board shall appoint an Investment Oversight Committee. The duties and responsibilities of the Investment Oversight Committee shall consist of the following:

- 1. Annual review of SCAQMD's Investment Policy before it is considered by the Governing Board, and recommend revisions, as necessary, to the Chief Financial Officer.
- 2. Quarterly review of SCAQMD's investment portfolio for conformance with SCAQMD's Annual Investment Policy diversification and maturity guidelines, and make recommendations to the Chief Financial Officer as appropriate.
- 3. Provide comments to the SCAQMD Chief Financial Officer regarding potential investments and potential investment strategies.
- 4. Perform such additional duties and responsibilities as may be required from time to time by specific action and direction of the Governing Board.

It shall not be the purpose of the Investment Oversight Committee to advise on particular investment decisions of SCAQMD.

V. IMPLEMENTATION

This Policy establishes and defines investable funds, authorized instruments, credit quality requirements, maximum maturities and concentrations, collateral requirements, and qualifications of brokers, dealers, and financial institutions doing business with or on behalf of the SCAQMD.

A. Standard of Care.

SCAQMD's Governing Board or persons authorized to make investment decisions on behalf of SCAQMD are trustees and fiduciaries subject to the prudent investor standard, as required by Code Section 53600.3, and shall be applied in the context of managing an overall portfolio. SCAQMD's investment professionals acting in accordance with written procedures and the Annual Investment Policy and exercising due diligence shall be relieved of personal responsibility for an individual security's credit risk or market price changes, provided deviations from expectations are reported in a timely fashion and appropriate action is taken to control developments.

The Prudent Investor Standard: When investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, a trustee shall act with care, skill, prudence, and diligence under the circumstances then prevailing, including but not limited to, the general economic conditions and the anticipated needs of the agency, that a prudent person acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims, to safeguard the principal and maintain the liquidity needs of the agency.

B. Investable Funds.

Investable Funds for purposes of this Policy are the SCAQMD general, special revenue, trust, agency and enterprise funds that are available for investment at any one time including any estimated bank account float. Investable Funds are idle or surplus funds of the SCAQMD including all segregated funds. All bond proceeds are excluded from Investable Funds. The Cash Flow Horizon is the time period in which the SCAQMD cash flow can be reasonably forecast. This Policy establishes the Cash Flow Horizon for SCAQMD idle or surplus funds to be three (3) years. The SCAQMD cash flow forecast must be updated at least every six months.

When the SCAQMD Chief Financial Officer determines that the cash flow forecast can be met, the Treasurer, at the request of the Chief Financial Officer, may invest a maximum of up to 75% of the minimum amount of funds available for investment during the Cash Flow Horizon in Special Purpose Investments ("SPI"), exclusive of investments in the State of California Local Agency Investment Fund ("LAIF"), in a separate account outside of the Pooled Surplus Investment ("PSI") Portfolio, in accordance with this Policy.

C. Authorized Investments.

Authorized investments shall match the general categories established by the California Government Code Sections 53601 et seq. and 53635 et seq.

Authorization for specific instruments within these general categories as well as portfolio concentration and maturity limits are established below as part of this Policy. No investments shall be authorized that have the possibility of returning a zero or negative yield when held to maturity; for example: inverse floaters, range notes or interest only STRIPS. As the California Government Code is amended, this Policy shall likewise become amended.

SCAQMD investments or deposits in the County of Los Angeles PSI Portfolio are governed by the County of Los Angeles Treasurer's Investment Policy for Pooled Surplus Funds. SCAQMD investments or deposits in the LAIF are governed by the investment policy and guidelines for LAIF as established by the Office of the Treasurer for the State of California. Investments in LAIF are an SPI investment and are limited in amount to the investment limits established for LAIF by the California State Treasurer.

SCAQMD funds and segregated funds that are invested by the Treasurer in an SPI separate account outside of the County of Los Angeles PSI Portfolio or LAIF are subject to this Policy. SCAQMD funds invested in an SPI separate account will be governed by various approved lists that may be established and maintained by the Los Angeles County Treasurer or the SCAQMD's Investment Advisor.

D. Maximum Maturities.

The maximum maturity of any SPI investment shall be five (5) years. The weighted average maturity of the SPI separate account portfolio may not exceed three (3) years. Maturity shall mean the nominal maturity of the security, or the unconditional put option date, if the security contains such provision. Term or tenure shall mean the remaining time to maturity when purchased.

E. Permitted Investments.

1. U.S. Treasuries.

Direct obligations of the United States of America and securities which are fully and unconditionally guaranteed as to the timely payment of principal and interest by the full faith and credit of the United States of America. U.S. Treasury coupon and principal STRIPS are not considered to be derivatives for the purpose of this Annual Investment Policy and are, therefore, permitted investments pursuant to the Annual Investment Policy.

2. Federal Agencies and U.S. Government Sponsored Enterprises.

Obligations, participations, or other instruments of, or issued by, a federal agency or a United States government sponsored enterprise.

3. Los Angeles County Pooled Surplus Investment Portfolio.

The County of Los Angeles Pooled Surplus Investment Portfolio is a pooled fund managed by the County Treasurer whose permitted investments are authorized in the Code and are governed by the Treasurer's Investment Policy with credit requirements and maturity limits established by the County Treasurer and adopted by the County Board of Supervisors.

4. State of California Local Agency Investment Fund.

LAIF is a pooled fund managed by the Office of the State Treasurer whose permitted investments are identified in the Code and whose credit requirements and maturity limits are established by the State Treasurer.

5. Shares of Money Market Mutual Funds.

Credit requirements for approved money market funds shall be limited to ratings of AAA by at least two nationally recognized statistical rating organizations (NRSRO) <u>or</u> managed by an investment advisor registered with the Securities and Exchange Commission with not less than five years' experience and with assets under management in excess of five hundred million dollars (\$500,000,000), <u>and</u> such investment may not represent more than ten percent (10%) of the total assets in the money market fund.

6. Bankers' Acceptances.

Bankers' acceptances must be issued by national or state-chartered banks or a state-licensed branch of a foreign bank. Eligible bankers' acceptances shall have the highest ranking or the highest letter and number rating as provided for by a NRSRO.

Maximum maturities for bankers' acceptances are 180 days.

7. Negotiable Certificates of Deposit.

Negotiable certificates of deposit must be issued by national or statechartered banks, a federally- or state-licensed branch of a foreign bank, savings associations and state or federal credit unions. Negotiable CDs must be rated at least A or its equivalent by at least one NRSRO.

The SCAQMD will not purchase negotiable certificates of deposit of a savings association or credit union as Special Purpose Investments if an SCAQMD Board member or a member of management staff, with investment authority, also serves on the Board of Directors or a committee of that savings association or credit union.

Maximum maturities for all negotiable certificates of deposit are five (5) years.

8. Commercial Paper.

Commercial paper of "prime" quality of the highest ranking or of the highest letter and number rating as provided for by a NRSRO. The entity that issues the commercial paper shall meet all of the following conditions in either paragraph a. or paragraph b.:

- a. The entity meets the following criteria:
 - i. Is organized and operating in the United States as a general corporation.
 - ii. Has total assets in excess of one billion dollars (\$1,000,000,000).
 - iii. Has debt other than commercial paper, if any, that is rated "A" or higher, or the equivalent, by a NRSRO.
- b. The entity meets the following criteria:
 - i. Is organized within the United States as a special purpose corporation, trust, or limited liability company.
 - ii. Has program wide credit enhancements including, but not limited to, over collateralization, letters of credit, or surety bond.
 - iii. Has commercial paper that is rated "A-1", or the equivalent, by at least two NRSROs.

Investments may not represent more than ten percent (10%) of the outstanding paper of the issuing corporation.

Maximum maturities for commercial paper are 270 days.

9. Medium Term Maturity Corporate Securities.

Medium-term corporate notes shall be rated in a rating category "A" or its equivalent or better by a NRSRO.

Floating rate medium term notes may be used if interest resets at least quarterly.

Maximum maturities for medium term maturity corporate securities are five years.

10. Mortgage Securities or Asset-backed Securities.

Credit requirements for any mortgage pass-through security, collateralized mortgage obligations, mortgage-backed or other pay-through bond, equipment lease-backed certificate, consumer receivable pass-through certificate, or consumer receivable backed bond shall be rated "AAA" or its equivalent or better by a nationally recognized rating service, and issued by an issuer having a "AA" or better rating by a NRSRO for its long-term debt.

The maximum maturity for Mortgage or Asset-backed Securities shall be five years.

11. Repurchase Agreements.

All repurchase transactions must be collateralized by U.S. Treasuries or Agencies with a market value of 102% for collateral marked to market daily, entered into with a broker-dealer which is a recognized primary dealer and evidenced by a broker-dealer master purchase agreement signed by the County Treasurer and approved by SCAQMD.

The maximum maturity of a repurchase agreement shall be 30 days.

12. Reverse Repurchase Agreements.

Reverse repurchase agreements are not allowed except as part of investments in the County of Los Angeles Pooled Surplus Investment Portfolio and the State of California Local Agency Investment Fund.

13. Variable and Floating Rate Securities.

Variable and floating rate securities are instruments that have a coupon or interest rate that is adjusted periodically due to changes in a base or benchmark rate. Investments in floating rate securities must utilize commercially available U.S. denominated indices such as U. S. Treasury bills or Federal Funds. Investments in floating rate securities whose reset is calculated using more than one of the above indices are not permitted, i.e. dual index notes.

Variable and Floating Rate Securities that are priced based on a single common index are not considered derivative securities.

The maximum maturity is five years.

14. Obligations of the State of California or any local agency within the state.

Permitted obligations will include bonds payable solely out of revenues from a revenue producing property owned, controlled or operated by the state or any local agency, or by a department, board, agency or authority of the state or any local agency.

Obligations of the State of California or other local agencies within the state must be rated at least A by a NRSRO.

15. Obligations of Supranational Institutions

Permitted obligations will include U.S. dollar denominated senior unsecured unsubordinated obligations issued or unconditionally guaranteed by any of the supranational institutions identified in California Government Code Section 53601(q), which are eligible for purchase and sale within the U.S.

Obligations of supranational institutions must be rated at least AA by a NRSRO.

F. Diversification Guidelines.

Diversification limits ensure that at the time of investment the SCAQMD's portfolio is not unduly concentrated in the securities of one type, industry, or issuer, thereby assuring adequate portfolio liquidity should one sector or issuer experience difficulties. The diversification limits outlined below for an individual investment instrument and issuer/counterparty are expressed as the maximum percentage of the total SCAQMD's portfolio invested by the Los Angeles County Treasurer. Maximum percentage limits shall apply at the time of purchase and allocations in excess of maximum percentages due to fluctuations in portfolio size will not be considered out of compliance with this Policy.

Maximum %

	Instrument	<u>of Portfolio</u>
1.	U.S. Treasuries	100%
2.	Federal Agencies & U.S. Government Sponsored Enterprises	100%
3.	Los Angeles County Pooled Surplus Investment Portfolio	100%
4.	State of California Local Agency Investment Fund	100%

5.	Shares of Money Market Mutual Funds	15%
6.	Bankers Acceptances	40%
7.	Negotiable Certificates of Deposit	30%
8.	Commercial Paper	25%
9.	Medium Term Maturity Corporate Securities	30%
10.	Mortgage Securities or Asset-backed Securities	20%
11.	Repurchase Agreements	50%
12.	Reverse Repurchase Agreements* N	lot Allowed
13.	Variable and Floating Rate Securities	30%
14.	Obligations of the State of California or any California local agenc	y 30%
15.	Obligations of Supranational Institutions	10%

* See Section V(E)(12).

	ximum % <u>Portfolio</u>
Any one Federal Agency or U.S. Government Sponsored Enterprise Securities of any single non-government issuer or its related entities.	
regardless of security type	, 5%
Securities of any State of California or California local agency	5%
Any one Repurchase Agreement or other collateralized counterparty name	50%
	5070

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G. Investment Agreements (For Bond Funds Only).

Investment Agreements or Fully Flexible Repurchase Agreements shall provide a_fixed spread to an index or a fixed rate of return with liquidity, usually one-to-seven day's withdrawal notice with no penalties, to meet cash flow needs of the SCAQMD. Investment Agreements may be with any bank, insurance company or broker/dealer, or any corporation whose principal business is to enter into such agreements, if:

- 1. At the time of such investment:
 - a. such bank has an unsecured, uninsured and unguaranteed obligation rated "AA" or its equivalent or better by at least two NRSROs, or
 - b. such insurance company or corporation has an unsecured, uninsured and unguaranteed claims paying ability rated "AAA" or its equivalent by at least two NRSROs, or

- c. such bank or broker/dealer has an unsecured, uninsured and unguaranteed obligation rated "A" or its equivalent or better by at least two NRSROs (and with respect to such broker/dealer shall be rated of the highest short-term ratings by at least two NRSROs); provided, that such broker/dealer or "A" rated bank also collateralize the obligation under the investment agreement with U.S. Treasuries or Agencies.
- 2. The agreement shall include a provision to the effect that if any rating of any such bank, insurance company, broker/dealer or corporation is downgraded below the rating existing at the time such agreement was entered into, the SCAQMD shall have the right to terminate such agreement.
- 3. Collateralization shall be at a minimum of 102%, marked to market, at a minimum, weekly.

The maximum term for an Investment Agreement for bond proceeds will be governed by the permitted investment language of the bond indenture.

H. Rating Downgrades.

Securities that are currently under "Credit Watch-Negative" for downgrade below the minimum credit criteria of this Policy by any NRSROs are not permitted for purchase for the SPI investments under this Policy.

The SCAQMD SPI separate account may from time to time be invested in a security whose rating is downgraded below the quality criteria permitted by the Annual Investment Policy. Any security held as an investment whose rating falls below the investment guidelines or whose rating is put on notice for possible downgrade shall be immediately reviewed for action by the Chief Financial Officer. The decision to retain the security until maturity, sell (or put) the security, or other action shall be approved by the Treasurer. Minimum credit criteria shall apply at the time of purchase.

I. Securities Safekeeping.

Securities shall be deposited for safekeeping with a third party custodian in compliance with Code Section 53608.

J. Review and Monitoring of Investments.

The Chief Financial Officer will submit to the Governing Board the quarterly reports on investments prepared by the Treasurer for the Pooled Surplus Investment Portfolio and SCAQMD funds invested in the State Local Agency Investment Fund and Special Purpose Investments. The Chief Financial Officer will review at least monthly the transactions and positions of SCAQMD funds invested in Special Purpose Investments outside of the Local Agency Investment Fund or the Pooled Surplus Investment Portfolio.

Approved March <u>64</u>, 201<u>56</u>

RESOLUTION NO. 16-____

A Resolution of the South Coast Air Quality Management District Board delegating authority to the Treasurer of the County of Los Angeles to invest and reinvest funds of the South Coast Air Quality Management District.

WHEREAS, the Governing Board of the South Coast Air Quality Management District desires to reaffirm the appointment of the Treasurer of the County of Los Angeles as Treasurer of the South Coast Air Quality Management District; and

WHEREAS, the Governing Board of the South Coast Air Quality Management District pursuant to Section 40527 of the Health and Safety Code has authority to appoint a Treasurer; and

WHEREAS, the Governing Board of the South Coast Air Quality Management District pursuant to Section 53607 of the Government Code is required to annually renew the delegation of authority to its Treasurer to invest or to reinvest funds, or sell or exchange securities of the District;

THEREFORE, BE IT RESOLVED that the Governing Board of the South Coast Air Quality Management District hereby delegates to the Treasurer of the County of Los Angeles the authority to invest and to reinvest funds of the South Coast Air Quality Management District.

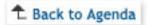
AYES:

NOES:

ABSENT:

Date:

Clerk of the District Board



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 13

- PROPOSAL: Execute Contract for Elevator Service, Repairs and Preventative Maintenance
- SYNOPSIS: On October 2, 2015, the Board authorized the release of an RFP for elevator service, repairs and preventative maintenance. This action is to execute a three-year contract with ThyssenKrupp Elevator Inc. for a total amount not to exceed \$111,276. Sufficient funds are available in the FY 2015-16 Budget and funding will be included in successive budgets for each of the remaining fiscal years.
- COMMITTEE: Administrative, February 12, 2016; Recommended for Approval

RECOMMENDED ACTION:

Authorize the Executive Officer to execute a three-year contract with ThyssenKrupp Elevator Inc. for a total amount not to exceed \$111,276.

Barry R. Wallerstein, D.Env. Executive Officer

Background

WJJ:BJ

The current contract with ThyssenKrupp Elevator Inc. for elevator service, repairs and preventative maintenance expires on March 31, 2016. On October 2, 2015, the Board authorized the release of RFP #P2016-08 to request bids for elevator service, repairs and preventative maintenance. SCAQMD has one hydraulic and five traction elevators, and one dumbwaiter.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective methods of outreach to the South Coast Basin.

Additionally, potential bidders were notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP has been emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (http://www.aqmd.gov).

Proposal Evaluation

Seven proposals were mailed out and five contractors attended the October 15, 2015, mandatory bidder's conference. Four proposals were received when final bidding closed at 2:00 p.m. on November 12, 2015, which are complete and meet RFP requirements.

The evaluation panel included three SCAQMD employees: the Building Maintenance Manager, Business Services Manager, and a Principal Air Quality Instrument Specialist. Of these panel members, one is African American, one is Caucasian, and one is Hispanic; one is female and two are male.

Evaluation of the proposal was based on criteria specified in the RFP, which included cost, understanding of requirements, contractor qualifications and references regarding past work experience. Staff recommends the contract be awarded to the highest-scoring bidder, ThyssenKrupp Elevator Inc., a full-service elevator contractor with over 35 years of experience in Southern California. ThyssenKrupp Elevator Inc. has serviced and maintained SCAQMD's elevator equipment for the past three years. Staff believes that ThyssenKrupp's higher proposed cost is commensurate with their greater years of professional experience in elevator service, repair and preventative maintenance.

Proposal

This action is to issue a three-year contract with ThyssenKrupp Elevator Inc. for an amount not to exceed \$111,276.

Resource Impacts

Sufficient funds are available in the approved FY 2015-16 Budget for the remainder of the fiscal year. Since this is proposed to be a three-year contract, continued funding will need to be included in the budgets for each of the remaining fiscal years of the contract. Annual costs are \$7,485 for the remainder of FY 2015-16 (3 months); \$36,140 for FY 2016-17; \$37,388 for FY 2017-18; and \$30,263 for 9 months of FY 2018-19.

Attachment

Evaluation Summary

ATTACHMENT

Evaluation Summary of Qualifying Bids

RFP #P2016-08, Elevator Service, Repairs and Preventative Maintenance

COMPANY NAME	BID AMOUNT	COST POINTS	APPROACH TO MEETING THE STATEMENT OF WORK	CONTRACTOR QUALIFICATIONS	REFERENCE & EXPERIENCE	LOCAL, DVBE & SMALL BUSINESS POINTS	TOTAL POINTS
ThyssenKrupp Elevator	\$111,276	21	18	18	10	10	77
Nextlevel Elevator Inc.	\$89,257	29	8	5	no references provided	15	58
Caliber Elevator Corporation	\$86,353	30	9	16	4	0	52
A-Z Tech Elevator Company	\$106,500	23	6	9	6	15	48

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 14

- PROPOSAL: Approve Position Reclassification
- SYNOPSIS: Article 45 of the Technical & Enforcement and Office, Clerical and Maintenance MOU provides for employee-initiated classification studies. Following receipt of a written request for a classification study from the Teamsters Local 911 representatives, Human Resources staff has evaluated the request and recommends Board approval for the reclassification of a Computer Operator position to an Assistant Telecommunication Technician position in Information Management. This action will result in an annual cost increase of approximately \$3,650. Sufficient funding for this annual cost increase exists in the FY 2015-16 Budget.
- COMMITTEE: Administrative, February 12, 2016; Recommended for Approval

RECOMMENDED ACTION:

Approve the reclassification of a Computer Operator position to an Assistant Telecommunication Technician position in Information Management.

Barry R. Wallerstein, D.Env. Executive Officer

WJJ

Background

Following the process provided for in Article 45 of the Teamsters MOU, an employee in the Technical & Enforcement bargaining unit in the Computer Operator classification in Information Management submitted a request for a reclassification study, citing that he had been performing the higher-level duties of the Telecommunications Technician I classification for some time. Human Resources staff researched having a contracted classification study conducted for the Computer Operator classification, but the cost to perform the classification study was between \$5,750 and \$8,265. In the alternate, a Human Resources Manager with extensive professional experience in classification and compensation studies conducted the review. After meeting with several supervisors, a manager and an Assistant Deputy Executive Officer in Information Management, it had been determined that the employee requesting the reclassification had not been performing the full range of duties at the Telecommunications Technician I or II level, but more accurately in a training capacity in the Assistant Telecommunication Technician classification range of duties. This decision is supported by the Assistant Deputy Executive Officer of Administrative and Human Resources. A classification and compensation consultant under contract with SCAQMD, Koff & Associates, has begun conducting studies of several classifications within Information Management to ensure that the critical functions for these positions are correctly identified.

Proposal

Human Resources staff recommends, following its analysis of the reclassification request submitted by the Teamsters Local 911, that the Board approve the reclassification of the incumbent employee in a Computer Operator position (#0994) in Information Management to an Assistant Telecommunication Technician classification.

Resource Impacts

The annual fifth-step salary cost for the Computer Operator position is \$56,937, and for the Assistant Telecommunication Technician position \$60,587, for an annual increase of \$3,650 for the reclassification. The position will remain in the Teamsters Technical & Enforcement bargaining unit. Sufficient funding for this annual cost increase exist in the FY 2015-16 Budget.

Attachments

Attachment A – Position Classification for Computer Operator Attachment B – Position Classification for Assistant Telecommunication Technician

ATTACHMENT A



TITLE: COMPUTER OPERATOR

Approved: 11-03-89

DEFINITION: Under general supervision, operates general purpose computers and related peripheral equipment; and controls systems performance by means of console and on-line terminals; and does other work as required.

<u>CLASSIFICATION STANDARDS</u>: This class reports to the Computer Operations Supervisor and is characterized by the responsibility to operate general purpose computers and associated peripheral equipment. The class is further characterized by the responsibility to monitor and control the execution of business, scientific and engineering programs and to operate computer equipment according to operating instructions.

EXAMPLES OF DUTIES:

Operates general purpose computers and their peripheral equipment including tape drives, printers, or other input and output media.

Selects and loads input and output units with materials such as tapes, diskettes, disk packs, and printout forms for operating runs.

Monitors and controls electronic computer systems processing business and/or scientific data using batch, real time, or process control methods to ensure that production schedules are maintained.

Observes system operations and determines whether programs appear to be operating correctly; analyzes potential problems and takes corrective action where called for or seeks assistance from programmers and/or the Computer Operations Supervisor where causes of problems are not apparent.

Maintains records required to supplement console logs, including problem documentation and actions taken, computer utilization logs, file identification, and similar data.

MINIMUM REQUIREMENTS:

EITHER I-

EXPERIENCE: Two years in the class of Information Systems Technician.

OR II-

Six months of EXPERIENCE in the operation of multiuser computers.

EDUCATION: Completion of 15 semester or 22.5 quarter units from an accredited college or university in data processing, computer operations, or a related field.

KNOWLEDGE OF: Computer operating standards and procedures and basic data processing equipment and concepts.

ABILITY TO: Operate general purpose computers and related peripheral equipment; monitor and control business, scientific, and engineering data through use of an electronic computer system; load tapes, disk drives, and printers; and identify system malfunctions and initiate corrective action to ensure records and files are properly maintained.



TITLE: ASSISTANT TELECOMMUNICATIONS TECHNICIAN

Approved: 10-08-99

DEFINITION: Under supervision and in a training capacity, assists in the installation, repair, and maintenance of computer hardware and data communications systems and equipment; assists in the installation of telephones and diagnosis of equipment malfunctions; assists in the operation of telecommunications consoles and monitoring of network performance; assists and participates in the installation, modification, and maintenance of radio communications systems and equipment; assists users with computer hardware and network operations and applications; prepares records and reports on service and inventory of telecommunications equipment and parts; and does other work as required.

CLASSIFICATION STANDARDS: Assistant Telecommunications Technician is an entry-level class into the field of telecommunications equipment installation, repair, and maintenance. Incumbents learn to provide telephone, computer hardware and software, and data communications equipment support to District users, and to participate in the installation and repair of radio communications systems and equipment. Assignments become increasingly complex, and incumbents are expected to advance to the Telecommunications Technician I class when required experience and level of proficiency are attained.

EXAMPLES OF DUTIES:

Learns to assist in: repair, installation, and maintenance of computer hardware and data communication systems; installation of telephone equipment and connect cabling; repair of wiring; analysis, diagnosis, and correction of hardware problems.

Learns to provide preventative maintenance on terminals, personal computers, and printers; prepare and maintain records and reports of maintenance and computer use activities.

Learns to assist in preparation and maintenance of system documentation required for telecommunications networks, including updates of building/floor blueprints, network database, procedures manual, and Private Area Branch Exchange configuration.

Learns to assist and participate in the installation, modification, and maintenance of radio communications systems; participate in the determination of user needs.

Learns to order and assist in the installation of computer boards, parts, and supplies for telephones, radio systems, computers, and auxiliary equipment, according to design specifications and program requirements.

Learns to provide information and assistance to District Users regarding telephone, computer hardware, and data network use and functions; participate in the development of alternative computer and equipment applications and functions to achieve user product requirements.

Learns to maintain and monitor equipment and parts inventory; track equipment and hardware inventory throughout the District; may recommend equipment and supplies for purchase and budget preparation.

Learns to assist in operation of telecommunications network management consoles and monitor network performance; diagnosis of network malfunctions and implementation of corrective action; assessment of network performance and allocation of resources, as required.

Learns to provide assistance to other Information Management personnel and attend meetings on equipment problems, projects, and technical developments, as necessary.

ATTACHMENT B

ASSISTANT TELECOMMUNICATIONS TECHNICIAN

MINIMUM REQUIREMENTS:

EXPERIENCE: One year of computer and telecommunications equipment operation, installation, and repair experience. Familiarity with computer and telecommunications equipment parts and desktop configurations and software.

SUBSTITUTION: Completion of 30 semester (45 quarter) units from an accredited college or university in electronics, computer repair, or a related field may substitute for up to one year of the required experience.

KNOWLEDGE OF: Computer and telecommunications hardware and systems installation principles and practices; principles and methods of configuration and installation of component boards and other electronic components; principles and methods of data communications equipment and network operating system software; methods of report writing, record keeping, and modern office methods and procedures.

ABILITY TO: Learn to diagnose and repair computer, network, and telephone malfunctions; listen to users' requirements and recommend solutions and alternatives; perform preventive maintenance; train others in basic hardware maintenance; interpret and explain hardware and equipment manuals; learn and participate in component-level troubleshooting and repair work; establish and maintain effective working relationships with those contacted in the course of work; communicate clearly and concisely, both orally and in writing; and prepare a variety of routine records and reports.

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 15

- PROPOSAL: Amend Contract for Document and Case Management System for SCAQMD's Legal Department
- SYNOPSIS: On December 6, 2013, the Board approved a contract for \$238,130 with CourtView Justice Solutions, Inc. for implementation of Document and Case Management Software. Legal is currently finalizing implementation of the project. Additional integration for data exchange and production of a specialized report is necessary to fully utilize the capabilities of the software. This action is to amend the contract and appropriate additional funds for the completion of the project.
- COMMITTEE: Administrative, February 12, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

- Appropriate \$34,500 from the Undesignated General Fund Balance to Legal's FY 2015-16 Budget, Services and Supplies Major Object, Professional and Special Services account.
- 2. Authorize the Executive Officer to amend the Contract with CourtView Justice Solutions, Inc. in an amount not to exceed \$34,500.

Barry R. Wallerstein, D.Env. Executive Officer

KRW:vmr

Background

On December 6, 2013, the Board approved a contract with CourtView Justice Solutions, Inc. for \$238,130 to implement a Document and Case Management Software system. The project was initiated to upgrade Legal's document access and case management capabilities. Legal is currently finalizing implementation of the project, which will be completed this month. The new software is specifically designed to draw enforcement data from the SCAQMD CLASS database onto the desktops of Legal staff where the data can be used for the preparation of legal documents. The integration required the development of scripts to pass data between the two systems. Beginning cost estimates were not sufficient to fully cover the work required. Costs initially allocated to facilitate the data exchange between the software and CLASS have been depleted. The integration necessitates an additional \$22,000. Additionally, production of a specialized report providing Case Settlement data to the Board is necessary due to the pending stoppage of Legal's current proprietary database. This system, known as DPOP, is scheduled to be taken off line within the next few months and will no longer be supported. The cost to design and deploy the report is \$12,500. This proposed action is to amend the contract and appropriate additional funds for the completion of the project.

Proposal

In order to complete and enhance software technology advancements in Legal, it is necessary to appropriate additional funds and amend the existing contract to finalize implementation and production of required reports.

Resource Impacts

Sufficient funds will be available in Legal's FY 2015-16 Budget upon approval of this Board letter.

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 16

PROPOSAL: Authorize Staff to Petition U.S. EPA to Adopt Lower On-Road Heavy-Duty Engine Exhaust Emission Standards for NOx.

SYNOPSIS: The largest single category of NOx emission sources in the South Coast Air Basin for 2023 and 2031 is projected to be emissions from heavy-duty trucks and further control of this category is essential to attain the 2023 and 2031 ozone air quality standards. CARB's draft mobile source strategy for the 2016 AQMP includes a proposal for CARB to adopt a lower on-road heavy-duty engine standard for NOx (lowering the standard from 0.2 g/bhp-hr to 0.02 g/bhp-hr) for engines for sale in California, but the majority of the NOx emissions from heavy-duty trucks in California come from trucks that are registered out-of-state. U.S. EPA's position is that states cannot assign control measures in the state implementation plan to the federal government under the Clean Air Act. However, under the Administrative Procedure Act, any person may petition a federal agency for a rulemaking. This action is to authorize staff to petition U.S. EPA to adopt a 0.02 g/bhp-hr NOx engine exhaust emissions standard on a nationwide basis. If successful, this action will greatly assist the region in reaching ozone air quality standards, and will help level the economic playing field between businesses purchasing trucks in California and those purchasing out of state.

COMMITTEE: Mobile Source, February 19, 2016; Recommended for Approval

RECOMMENDED ACTION:

Authorize staff to petition U.S. EPA to adopt a lower on-road heavy-duty engine exhaust emissions standard for NOx.

Barry R. Wallerstein, D.Env. Executive Officer

Background

In 2008, the primary and secondary 8-hour National Ambient Air Quality Standards ("NAAQS") for ozone were reduced from 0.080 ppm – set in 1997 – to 0.075 ppm. (7 Fed. Reg. 16436.) To date, the South Coast Air Basin remains designated as "Extreme Nonattainment" for both the 1997 and 2008 8-hour standards. Expected attainment dates for the standards set during both of these years are fast-approaching; the 1997 standards must be attained in 2023 while the 2008 standards must be met in 2031. Additionally, as of December 2015, U.S. EPA strengthened the ozone standard to 0.070 ppm. (80 Fed. Reg. 65292.) Given that NOx is a precursor to ozone, attaining the ozone standards will require substantial reductions in emissions of NOx beyond reductions from current rules, programs, and commercially available technologies. In fact, the District has projected that the region must reduce regional NOx emissions by approximately 50% by 2023 and 65% by 2031 in order to attain the 8-hour ozone NAAQS as required by federal law. It is projected that in order to achieve the NAAQS for ozone, it is necessary to revise U.S. EPA's current nationwide on-road heavy-duty engine standard for NOx from 0.2 g/bhp-hr to 0.02 g/bhp-hr as soon as possible.

Petitioning the U.S. EPA

The Administrative Procedure Act ("APA") codifies the right to petition federal agencies for rulemakings, providing that "[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule." (5 U.S.C. § 553(e).) Courts have construed the APA rather broadly to permit the public to petition for rulemaking under the Clean Air Act. (*See Friends of the Earth v. U.S. EPA* (D.D.C. 2013) 934 F. Supp. 2d 40, 54 (suggesting that 5 U.S.C. §§ 553(e) and 555(b) apply broadly to the U.S. EPA and Clean Air Act.).) Importantly, in *Massachusetts v. U.S. EPA* (2007), the Supreme Court concluded that Section 7607(b)(1) of the Clean Air Act contains the "concomitant procedural right to challenge the rejection of [a] rulemaking petition as arbitrary and capricious." (549 U.S. 497, 520.) Although the U.S. EPA acknowledges that its status as a federal agency affords all interested persons the right to petition it pursuant to the APA, it does not set forth any specific procedures or guidance for doing so. In general, however, most regulations simply ask that petitioners identify their interest, describe the substance of their proposal, and provide all available information in support of their proposal.

Staff seeks authorization to petition U.S. EPA for a revision of the current on-road heavy-duty engine standard for NOx. Section 202(a)(1) of the Clean Air Act requires the Administrator of the U.S. EPA to prescribe, by regulation, and from time to time revise, in accordance with the provisions of this section,

standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare. Such standards shall be applicable to such vehicles and engines for their useful life . . . , whether such vehicles and engines are designed as complete systems or incorporate devices to prevent or control such pollution.

(42 U.S.C. § 7521(a)(1).) Pursuant to Section 202(b)(1)(C) of the Clean Air Act, the Administrator may promulgate such regulations, revising any NOx emission standard prescribed or previously revised, as needed to protect public health or welfare, "taking costs, energy, and safety into account." (42 U.S.C. § 7521(b)(1)(C).)

The language of Section 202 appears to afford the Administrator reasonable discretion in determining when to revise the standard. (See e.g., WildEarth Guardians v. U.S. E.P.A. (D.C. Cir. 2014) 751 F.3d 649, 653-655 (noting that the language of Clean Air Act Section 111 – specifically phrases such as "from time to time" and "in his judgment" - implies that the Administrator may exercise reasonable discretion in determining exactly when to add a new source to the list of regulated air pollutants and affords her the ability to prioritize sources that are the most significant threats to public health).) However, it is very clear that the public health and welfare will suffer without a more stringent NOx emission standard. Currently, on-road heavy-duty highway engines, such as those used in trucks and buses, must meet a NOx emission standard of 0.2 g/bhp-hr. Eighty-eight percent of regional NOx emissions come from mobile sources, with on-road heavy-duty diesel trucks projected to be the largest single contributor to these emissions in 2023. Based on preliminary analyses, the approximately 580 tons per day ("tpd") of current Basin NOx emissions are projected to drop to approximately 300 tpd and 250 tpd in the attainment years of 2023 and 2031, respectively, due to continued implementation of already adopted control measures. However, without additional measures, these emissions reductions are not sufficient for the Basin to meet the required ozone standards. Substantial reductions in NOx emissions from the heavy-duty fleet, including interstate trucks, are required. The majority of heavy-duty trucks that operate in California are purchased out-of-state and may be operated as part of a nationwide fleet. Staff has calculated that a nationwide standard would be much more effective than a California-only standard, with the relative benefit increasing over time.

Staff requests that the Board authorize it to petition U.S. EPA to adopt a lower on-road heavy-duty engine exhaust emissions standard for NOx as soon as possible to enable the Basin to achieve federal ambient ozone standards.

Resource Impacts

The petition will be prepared using existing staff resources.



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BOARD MEETING DATE: March 4, 2016 AGENDA NO. 17

PROPOSAL: Approve Contract Awards and Modification Approved by MSRC

SYNOPSIS: As part of their FYs 2014-16 AB 2766 Discretionary Fund Work Program, the MSRC approved two new contracts under the Alternative Fuel Infrastructure Program, as well as a modification to an award under the Transportation Control Measure Partnership Program. At this time the MSRC seeks Board approval of the contract awards and modification.

COMMITTEE: Mobile Source Air Pollution Reduction Review, February 18, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

- 1. Approve the award of two contracts totaling \$117,000 under the Alternative Fuel Infrastructure Program, as part of approval of the FYs 2014-16 AB 2766 Discretionary Fund Work Program, as described in this letter and as follows:
 - a. A contract with Burrtec Waste & Recycling Services in an amount not to exceed \$100,000 for installation of a new limited access CNG fueling station; and
 - b. A contract with Transit Systems Unlimited in an amount not to exceed \$17,000 for expansion of their existing limited access CNG fueling station;
- 2. Approve modified award to San Bernardino Associated Governments under the Transportation Control Measure Partnership Program, extending the section of freeway on which freeway patrol services would be provided, as part of approval of the FYs 2014-16 AB 2766 Discretionary Fund Work Program, as described in this letter;
- 3. Authorize MSRC the authority to adjust contract awards up to five percent, as necessary and previously granted in prior work programs; and
- 4. Authorize the Chairman of the Board to execute new and modified contracts under FYs 2014-16 Work Program, as described above and in this letter.

Larry McCallon, Vice Chair, MSRC

Background

In September 1990 Assembly Bill 2766 was signed into law (Health & Safety Code Sections 44220-44247) authorizing the imposition of an annual \$4 motor vehicle registration fee to fund the implementation of programs exclusively to reduce air pollution from motor vehicles. AB 2766 provides that 30 percent of the annual \$4 vehicle registration fee subvened to the SCAQMD be placed into an account to be allocated pursuant to a work program developed and adopted by the MSRC and approved by the Board.

In November 2014, the MSRC selected initial categories for the FYs 2014-16 Work Program, with the understanding that additional project categories would continue to be developed and brought forward for consideration at a later date. At its February 18, 2016 meeting, the MSRC considered awards under the Alternative Fuel Infrastructure Program, and a modification to an award under the Transportation Control Measure CTC Partnership Program. Details are provided below in the Proposals section.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, public notices advertising the Alternative Fuel Infrastructure Program Announcement were published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin. In addition, the Program Announcement was advertised in the Desert Sun newspaper for expanded outreach in the Coachella Valley.

Additionally, potential bidders may have been notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the solicitation was emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's Website (<u>http://www.aqmd.gov</u>). Further, the solicitation was posted on the MSRC's website at <u>http://www.cleantransportationfunding.org</u> and electronic notifications were sent to those subscribing to this website's notification service.

Proposals

At its February 18, 2016 meeting, the MSRC considered recommendations from its MSRC-TAC and approved the following:

Alternative Fuel Infrastructure Program

As part of the FYs 2014-16 Work Program, the MSRC allocated \$5.0 million for the implementation of new and expanded CNG and LNG refueling stations and modification of maintenance facilities to accommodate gaseous-fueled vehicles. A Program Announcement, #PA2015-12, was developed and released on May 1, 2015, with an open application period commencing that day and closing July 29, 2016. To date, the MSRC

has awarded a total of \$250,000 to two applications. The MSRC approved two additional applications totaling \$117,000 as part of the FYs 2014-16 AB 2766 Discretionary Fund Work Program, as follows:

- a. A contract with Burrtec Waste & Recycling Services in an amount not to exceed \$100,000 for installation of a new limited access CNG fueling station; and
- b. A contract with Transit Systems Unlimited in an amount not to exceed \$17,000 for expansion of their existing limited access CNG fueling station.

Transportation Control Measure Partnership Program

As part of the FYs 2014-16 Work Program, the MSRC approved an award of \$800,625 to San Bernardino Associated Governments (SANBAG) to establish and implement a new freeway service patrol (FSP) beat on SR-210 from the Los Angeles County line to Cherry Avenue. SANBAG subsequently determined that extending the beat by approximately one and a half miles, to Citrus Avenue, would establish safer drop point locations and turnaround points. SANBAG attests that there would be no change to the proposed days and hours of operation. SANBAG requested to extend the beat's eastern endpoint from Cherry Avenue to Citrus Avenue. The MSRC approved the modified beat endpoint as part of the FYs 2014-16 AB 2766 Discretionary Fund Work Program.

At this time, the MSRC requests the SCAQMD Board to approve the contract awards and modification as part of approval of the FYs 2014-16 AB 2766 Discretionary Fund Work Program as outlined above. The MSRC also requests the Board to authorize the SCAQMD Chairman of the Board the authority to execute all agreements described in this letter. The MSRC further requests authority to adjust the funds allocated to each project specified in this Board letter by up to five percent of the project's recommended funding. The Board has granted this authority to the MSRC for all past Work Programs.

Resource Impacts

The SCAQMD acts as fiscal administrator for the AB 2766 Discretionary Fund Program (Health & Safety Code Section 44243). Money received for this program is recorded in a special revenue fund (Fund 23) and the contracts specified herein, as well as any contracts awarded in response to the solicitation, will be drawn from this fund.

L Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 18

- PROPOSAL: Approve SCAQMD Comments on U.S. EPA's Proposed Amendments to Regulation Governing U.S. EPA Procedures for Investigating Title VI Complaints
- SYNOPSIS: U.S. EPA has released for public comment its proposed amendments to its regulation governing U.S. EPA procedures for investigating complaints under Title VI of the Civil Rights Act of 1964, which prohibits discrimination by federally-funded agencies on the basis of race, color, or national origin. U.S. EPA proposes to eliminate specific deadlines for individual steps in the complaint investigation process. Comments are due March 12, 2016. This action is to approve SCAQMD comments and the transmittal of those comments to U.S. EPA.

COMMITTEE: Stationary Source, February 19, 2016; Recommended for Approval

RECOMMENDED ACTION:

Approve SCAQMD comments regarding U.S. EPA's Proposed Rule Amendment: *"Nondiscrimination in Programs or Activities Receiving Federal Assistance from the Environmental Protection Agency,"* 80 Fed. Reg. 77,284 (Dec. 14, 2015), and direct the Executive Officer to submit approved comments to U.S. EPA by the March 12, 2016, deadline for public comments.

Barry R. Wallerstein, D.Env. Executive Officer

BBB:pa

Background

The SCAQMD Board has long taken a leadership role in adopting and implementing environmental justice initiatives designed to help ensure equitable environmental policymaking and enforcement to protect all SCAQMD residents from the health effects of air pollution. An important federal environmental justice statute is Title VI of the Civil Rights Act of 1964, which prohibits any agency receiving federal funding from discriminating in the administration of its programs.

Title VI of the Civil Rights Act of 1964 provides in pertinent part:

"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." (42 U.S.C. § 2000d.)

SCAQMD receives an annual grant from U.S. EPA under section 105 of the Clean Air Act, (42 U.S.C. § 7405), and other grants under section 103, (42 U.S.C. § 7403), and is therefore subject to Title VI. U.S. EPA has issued regulations under Title VI which prohibit programs having a discriminatory effect ("disparate impact") as well as those that are intentionally discriminatory. If U.S. EPA finds an agency in violation, U.S. EPA will initiate procedures to suspend or terminate U.S. EPA funding until the violation is corrected. Other federal funding agencies have similar regulations.

U.S. EPA's Proposal

In 2010, U.S. EPA initiated a review of the activities of its Office of Civil Rights, which investigates Title VI complaints as well as complaints regarding internal U.S. EPA actions such as employment discrimination complaints. U.S. EPA retained Deloitte Consulting, which issued a report in 2011 noting a lack of timeliness in U.S. EPA's handling of complaint investigations. U.S. EPA adopted a program for improving its handling of these complaints through fiscal years 2015-2020. One of its proposals for improvement was to make its regulations more consistent with those of other federal funding agencies.

As part of its 2015-2020 program, U.S. EPA has proposed to amend its regulations governing its procedures for investigating complaints under Title VI, located at 40 C.F.R. §§ 7.10, et seq. The amendments would eliminate U.S. EPA's specific deadlines for taking actions during a complaint investigation and replace them with a general requirement to investigate "promptly." According to U.S. EPA, this proposed language is similar to that found in the regulations of a number of other federal funding agencies. U.S. EPA's stated reason for this proposal is to allow it to devote appropriate time and resources to individual cases rather than taking a cookie-cutter approach. U.S. EPA also notes that the complexities of many of its investigations make compliance with existing deadlines unrealistic.

Proposal: Summary of Draft Comments

Staff has drafted proposed SCAQMD comments (Attachment 1) for approval. In brief, the comments recommend that instead of entirely eliminating deadlines that may be unrealistic, U.S. EPA should amend those deadlines to provide a more realistic timeframe for action, while still ensuring expeditious investigations. The comments note that U.S. EPA can address the concern about the complexity of some cases by establishing a category of cases which U.S. EPA will identify as "complex" and

providing a longer deadline for completion of those investigations. U.S. EPA also is concerned that a strict deadline could hamper efforts at informal or innovative alternative dispute resolution processes. The proposed comments suggest that U.S. EPA can include in its regulations a provision for tolling (i.e. conditionally pause or delay) the running of the deadline if dispute resolution is ongoing and all parties agree to the tolling.

As a result of a Stationary Source Committee motion, staff has added a recommendation that U.S. EPA modify its regulations to allow U.S. EPA to grant a 30-day period to amend a complaint which may not initially appear to allege sufficient facts. If the complainant does not cure any defects within 30 days, the complaint would be dismissed. This process would be similar to the process used in court, and would be used where U.S. EPA has reason to believe that the defect in the complaint is curable. It would potentially save time in the long run as U.S. EPA already does in some cases informally allow the complainant to submit additional information, but without a clear deadline to do so.

The attached proposed comments explain that having specific deadlines is important to all stakeholders, including the complainant, the agency receiving funding, and any permit applicant or permit holder whose permit is at issue. (Many Title VI complaints challenge individual permits.) Finally, the proposed comments explain that replacing the specific deadlines with a requirement that U.S. EPA investigate "promptly" is not an adequate solution. Such a requirement would create undesirable uncertainty for all parties, be difficult to enforce, and potentially lead to increased litigation over whether U.S. EPA was acting promptly, compared to enforcing specific deadlines. Existing case law interpreting the word "promptly" illustrates that court decisions would likely vary widely and the results would be unpredictable. U.S. EPA held a "listening session" in Oakland on January 20 at which staff provided general comments opposing the complete removal of deadlines.

Staff requests that the Board approve the attached proposed SCAQMD comments and direct the Executive Officer to file them with U.S. EPA by the deadline of March 12, 2016.

Public Process

Staff presented a summary of the draft comments to the SCAQMD's Environmental Justice Advisory Group at its meeting on January 29, 2016, and did not receive any comments from the Advisory Group.

Attachment

Draft Comment Letter to U.S. EPA dated March 4, 2016

Office of the Executive Officer Barry R. Wallerstein, D. Env. 909.396.2100, fax 909.396.3340

March 4, 2016

via Federal Rulemaking Portal

Ms. Jeryl Covington Ms. Helena Wooden-Aguilar U.S. Environmental Protection Agency Office of Civil Rights (Mail Code 1201A) 1200 Pennsylvania Ave., NW Washington, D.C. 20460

Re: Proposed Rule Amendment: "Nondiscrimination in Programs or Activities Receiving Federal Assistance from the Environmental Protection Agency," 80 Fed. Reg. 77,284 (Dec. 14, 2015); EPA Docket No. EPA-HQ-OA-2013-0031

Dear Ms. Covington and Ms. Wooden-Aguilar:

Introduction

This letter presents the comments of the South Coast Air Quality Management District ("South Coast District" or "District") regarding the above-cited proposed rule amendments. The South Coast District is the regional agency primarily responsible for air pollution control in the South Coast Air Basin, which includes the Los Angeles area. The air basin encompasses all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. In addition, the District has responsibility for parts of Riverside and San Bernardino Counties located in the adjacent Salton Sea and Mojave Desert Air Basins, including the Palm Springs area. The District is home to about 17 million people and encompasses more than 10,000 square miles. The District regulates over 26,000

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permitted stationary sources ranging from small neighborhood drycleaners and auto body shops to major refineries and power plants.¹

The South Coast District is strongly committed to implementing environmental justice within its jurisdiction. In 1997, the District's Chairman, Dr. William A. Burke, proposed a series of 10 Environmental Justice Initiatives which were adopted by the Governing Board. The purpose of these initiatives was to ensure equitable environmental policymaking and enforcement to protect all residents of the District from the health effects of air pollution. All of these initiatives have been implemented, and the District continues to implement additional programs to further environmental justice goals. Key accomplishments in implementing environmental justice include:

- 1) Forming an Environmental Justice Advisory Group to provide input into District policies and programs, focusing on environmental justice concerns and impacts on communities;
- 2) Holding frequent town hall meetings throughout the District in the evening or on weekends where Board members and executive staff listen to and respond to community concerns and follow up on issues raised;
- 3) Completing a ground-breaking series of basin-wide air toxics exposure studies to identify the sources of toxic exposure and relative levels of exposure in different communities; and adopting or amending rules to address identified sources of toxics, such as a hexavalent chromium rule for cement plants and a clean fleets rule to reduce diesel pollution, which causes over 80% of the cancer risk from air toxics in the region;
- 4) Adopting and implementing an Air Toxics Control Plan and Clean Communities Plan to identify all feasible measures to reduce exposure to air toxics,
- 5) Forming a Cumulative Impacts Working Group and developing strategies to reduce such impacts including adopting more stringent requirements for permitting facilities near sensitive receptors;
- 6) Requiring at least 50% of incentive funding to reduce mobile source air pollution to be spent in disproportionately impacted areas that have high levels of poverty and exposure to either PM₁₀ or toxic air contaminants;

¹A state agency, the California Air Resources Board, is primarily responsible for regulating mobile sources in California and is the only state agency authorized to adopt emission standards for motor vehicles and non-road engines, with EPA's approval.

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7) Holding a Forum entitled "Environmental Justice for All: A Conversation with the Community" and forming an Environmental Justice Community Partnership to strengthen and build the District's relationships and alliances with community organizations and to hold events and workshops to facilitate open dialogue and information-sharing on air quality issues.

The South Coast District appreciates and supports EPA's efforts to strengthen and improve its procedures for investigating Title VI complaints. The District also supports EPA's goals to devote appropriate time and resources to individual investigations, rather than using a cookie-cutter approach, and to allow for innovative voluntary dispute resolution processes.

However, the District believes that the proposal to eliminate all deadlines for EPA actions in conducting investigations is the wrong way to address EPA's goals. Moreover, replacing the existing deadlines with a requirement that EPA act "promptly" is not a workable solution. Instead, EPA should modify its regulations to modestly lengthen deadlines that are unrealistically short, create a category of cases which are complex and need a longer (but still expeditious) deadline for resolution, and allow for a "tolling" of the deadline if the parties are in the process of exploring voluntary dispute resolution and agree to the tolling.

Eliminating All Deadlines for Complaint Investigations Will Hamper the Process Rather than Assist It

We believe that the proposal to eliminate all EPA regulatory deadlines for conducting investigations is misguided. Even if EPA establishes internal deadlines, which may vary by each case, these will likely not be as effective as enforceable external guidelines. Our experience has been that parties to disputed matters are far less likely to complete assignments in a timely manner if there is no associated deadline that has consequences. Moreover, with no external deadline, there is nothing to prevent EPA from extending its internal deadlines, again to the detriment of timely investigations. A 2013 article in Psychology Today entitled "Here's What Really Happens When You Extend a Deadline" (copy attached) explained the frequently-adverse consequences of extending deadlines. In many cases, the work simply gets delayed commensurately.

Instead of entirely eliminating deadlines, EPA can address all of its concerns by appropriately adjusting its regulatory deadlines. Notably, the 2011 Deloitte Consulting Report on EPA's Office of Civil Rights contained a number of recommendations for improving the program, but did not recommend eliminating any deadlines. Nor did the January 18, 2012 EPA Civil Rights Executive Committee Report, "Recommendations for Developing a Model Civil Rights Program at the Environmental Protection Agency" include a recommendation to eliminate deadlines.

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EPA Can Meet its Goals by Establishing Reasonable Deadlines for Each Stage of Complaint Investigation

A. Deadline for Acknowledging the Complaint and Notifying the Affected Agency

The first deadline EPA proposes to eliminate is the existing deadline for notifying the complainant and the agency that is the subject of the complaint that the complaint has been received. The current deadline is five calendar days. 40 C.F.R. § 7.120(c). EPA recognizes that acknowledging receipt of a complaint is a "purely administrative task" and can be done quickly. 80 Fed. Reg. 77,287 col. 3. If 5 calendar days proves unrealistic in some cases, EPA should adopt a longer but still expeditious deadline, such as 10 days. Otherwise, complainants will be worried that their complaint has not been received, while agencies that are the subject of complaints will be deprived of the opportunity to quickly begin their own investigation of the allegations in the complaint. We do not believe EPA has articulated a basis for needing additional flexibility beyond a slight increase in time to acknowledge receipt of a complaint, since this task is substantially similar for all complaints.

B. Deadline for Jurisdictional Review

The next deadline EPA proposes to eliminate is the twenty days after acknowledgement of receipt of the complaint to review the complaint for acceptance, rejection, or referral to another federal agency. 40 C.F.R. § 7.20(d)(1). EPA calls this the "jurisdictional review." EPA has explained that the jurisdictional requirements are for a complaint to be accepted are: (1) it must be in writing, (2) it must describe an alleged discriminatory act, (3) it must be filed within 180 calendar days of the alleged discriminatory act, and (4) it must be filed against an applicant for or a recipient of, EPA financial assistance. (See, e.g., EPA File No. 14R-06-R6; Jan. 26, 2009 rejection letter attached). According to the Deloitte Report, page 26, only 6% of complaints have been accepted or rejected within the currently-required 20 days, and half of the complaints have taken a year or more to be accepted or rejected.

Issues #1 and #3 above can be decided merely by looking at the complaint, unless the complaint does not state the date of the discriminatory act. In such a case it may be necessary to contact the complainant for further information. But this could be accomplished quickly and we see no reason why it would take more than 30 days to obtain this information.²

² In contrast, EPA has not always resolved these simple issues quickly. In the attached rejection letter, 14R-06-06, the complaint was filed on September 18, 2006, but EPA did not request information regarding the date of the incident until over a year later on December 6, 2007. The complainant never provided the date, but it took EPA another year and a half to reject the complaint. (EPA File No. 14R-06-R6 Rejection Letter; Jan. 26, 2009).

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Issue #4, regarding whether the complaint is filed against an applicant or recipient of EPA funds, may be apparent on the face of the complaint. Alternatively, it may require EPA to search its funding records, but it seems likely that verifying this information would take no more than 10 days.

Next, EPA needs to decide whether the complaint describes an alleged discriminatory act. We suspect that this issue is the one that currently takes the most time and resources to evaluate. However, it is not overly complicated. In a more recent rejection letter, EPA clarified the nature of this inquiry. EPA stated that the complaint must "describe an alleged discriminatory act that, if true, would violate EPA's nondiscrimination regulations." EPA File No. 13R-12-R4 Dec. 7, 2012 rejection letter (attached). That rejection letter explained that the complaint "does not allege that the action resulted in a disparate impact based on race, color, national origin, or other protected basis, and therefore was rejected." *Id.* In other words, the decision to accept is *not* a decision on the merits; it is merely a decision that the complaint alleges facts which, *if true*, would violate EPA's discrimination regulations. It is essentially the same as a court ruling on a motion to dismiss a case for failure to state a claim upon which relief can be granted pursuant to Rule 12(b)(6). Judges routinely make similar decisions in a short period of time. Such a decision should not take more than 45 days and can be made concurrently with the decision on other jurisdictional issues.³

In addition, we recommend that EPA establish a new procedure whereby, if the complaint is initially deemed insufficient for a reason that might be corrected by amendment, EPA would have the discretion to grant the complainant an additional 30 days to allege additional facts to support the complaint. If the complainant fails to amend within this time, or the amended complaint is still insufficient, then EPA would finally reject the complaint. EPA would need to establish a new deadline for accepting, rejecting, or referring the amended complaint. We suggest an additional 30 days would be sufficient for this purpose. We believe this process may actually save EPA time in the long run, since currently it appears that EPA may be spending time contacting the complainant in an effort to clarify the complaint, and that this

³ The Deloitte Report mentions that Title VI complaints may raise complex issues concerning whether a complaint falls within Title VI jurisdiction because there is little legal precedence for comparison, and because investigations are challenged by a lack of scientific methods to conduct needed analyses. (Deloitte Report, p. 25.) This suggests that EPA may be trying to determine if the complaint is true (i.e., can be scientifically sustained) during the time it is deciding whether to accept a case. Instead, the decision to accept should be based on the facts alleged in the complaint, while the scientific evaluation occurs during the investigation phase. If EPA is uncertain whether a given set of facts, if true, would constitute a violation (due to lack of legal precedent), it could consider accepting the complaint and beginning an investigation. In such a case, an inquiry into the facts may show that the alleged facts did not actually occur, thus mooting the issue. If not, EPA will have more time to finally determine whether a violation occurred following a determination of the facts, during the time period for investigation.

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process results in delaying the decision whether to accept the complaint. Under this new procedure, the complainant would be limited to 30 days to try to further support the complaint. This approach might also be fairer to complainants who may have a valid complaint but simply do not know how to state the facts in a way to demonstrate the violation.

C. Deadline for Completion of Investigation

Finally, EPA proposes to eliminate its current deadline for completing its investigation and issuing "preliminary findings," which is 180 calendar days after beginning the investigation. 40 C.F.R. § 7.115(c)(i). EPA states that it remains committed to prompt investigations, and that without the burden of an unrealistic, self-imposed deadline, it will be better able to improve the entire Title VI program. 80 Fed. Reg. at 77,287 col. 1. However, EPA has not explained why it is necessary to completely eliminate investigation deadlines rather than set a more realistic deadline. A review of EPA's list of Title VI complaints indicates that only 16 have been formally accepted since 1993, although some may have been settled or informally resolved that would otherwise have been accepted, and some were dismissed without prejudice due to pending litigation. Thus, the burden of accepted cases can practically be handled by establishing realistic but expeditious deadlines.

Only some of EPA's accepted Title VI cases are available on line so we could not evaluate the relative complexity of these cases. However, we recommend that EPA keep the 180-day deadline for investigation of relatively simple cases, and establish a new, longer deadline for cases EPA deems to be complex. We recommend that the new, longer deadline be set at 18 months. EPA's notice describes a situation in which EPA had to develop and implement scientific models to evaluate pesticide exposure, and its analysis was subject to peer review. 80 Fed. Reg. at 77,285 col. 3. Given EPA's new focus on improving its processes, we believe any necessary technical expertise within the agency can be marshalled as needed to complete such an investigation within 18 months. If EPA disagrees, we recommend setting a longer but still expeditious deadline for completing the preliminary investigation rather than eliminating the deadline entirely.

Need for Clear and Specific Deadlines

It is very important to EPA's stakeholders that there be a specific, clear deadline for completion of the process. Complainants who believe they have been subjected to unlawful discrimination do not want to wait years before the violation is remedied. Public agencies that receive EPA funds will find it difficult to do advance planning and budgeting if their access to EPA funding remains uncertain over an extended period of time. Finally, many Title VI complaints involve individual permitted facilities. The permit holders or applicants often cannot afford to wait an extended period of time before beginning construction, and so will be forced to either abandon their project without any determination of a violation being

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made, or proceed to construction and operation at the risk that EPA may rule that their permit was issued in violation of law. These are both unacceptable options.

EPA also states that it needs flexibility in order to implement "potential resolution paths, including informal resolution and Alternative Dispute Resolution." 80 Fed. Reg. at 77,285 col. 3. This flexibility can easily be gained by including a provision in the regulations for the tolling of a deadline when a resolution path is initiated and for the duration of negotiations. However, it is imperative that such tolling occur only if agreed to by the complainant, the agency whose funding is challenged, and the permit holder or applicant, if any. Each of these stakeholders has a strong interest in expeditious resolution consistent with the recommendations above, so its consent must be required for a tolling of any deadline.

Moreover, under EPA's existing clear and specific deadlines, it has been held that a stakeholder may bring a legal action to compel compliance with these deadlines. *Rosemere Neighborhood Ass'n. v. EPA*, 584 F.3d. 1169 (9th Cir. 2009). Thus, all parties are assured that in the event of unreasonable delay, they can seek a court order requiring EPA action as soon as practicable.

A Requirement that EPA Act "Promptly" Would Create Undesirable Uncertainty, Be Difficult to Enforce, and Potentially Lead to Additional Litigation

Finally, substituting a requirement that EPA act "promptly" in place of specific deadlines is not a workable solution to EPA's concerns. According to EPA, "the definition of a prompt investigation and resolution turns on the factual context of the complaint" and "any investigatory time frame may be affected by the breadth and complexity of the issues in the complaint." 80 Fed. Reg. at 77,285 col. 3-77,286 col. 1. For this reason, a requirement that EPA act "promptly" does not provide any certainty to affected stakeholders. Even if EPA were to provide stakeholders with an estimate of the time required for investigating a given case, there would be no assurance that this estimate will be met, or that EPA would not extend its internal deadline.

Moreover, with a standard as vague as "promptly," it will be very difficult for any stakeholder to enforce EPA's duty to act expeditiously. First, the meaning of "promptly" may vary according to the circumstances, and the result of litigation will be impossible to predict. For example, in the Clean Air Act Title V permit context, the Court of Appeals ruled that EPA properly approved a period of three months as "prompt reporting" of emissions data for sulfur dioxide and nitrogen oxides, stating that it deferred to the agency's interpretation. *NYPIRG v. Johnson*, 427 F.3d 172, 184 (2005). On the other hand, the court found that EPA's interpretation of "promptly" as "quarterly" could not be sustained for reporting compliance with opacity standards, "in view of the plants' rich history of violating opacity requirements." *Id.* Additionally, the court may find that any delay is not unreasonable where the agency did not act in bad faith and the complexity of the issues

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explained some of the delay. NRDC v. N.Y. State Dept. of Envtl. Cons., 700 F. Supp. 173 (S.D.N.Y. 1988).

Thus, any stakeholder can theoretically seek a court order requiring prompt action under 5 U.S.C. § 706(1), allowing a lawsuit to compel agency action unlawfully withheld or unreasonably delayed. But as a practical matter, such a lawsuit would be difficult to win, given the inherent vagueness and variability of the term "promptly" and the courts' obligation to defer to reasonable agency interpretation.⁴

EPA contends that many other agencies do not have specific deadlines but rather rely on a requirement to "promptly" investigate complaints. 80 Fed. Reg. at 77,287 col. 1. However, there is no showing that these requirements for acting "promptly" can be effectively enforced. Our research revealed one decision regarding an investigation of a claim under a different statute: the Rehabilitation Act of 1973, 42 U.S.C. § 793, which prohibits government contractors from discriminating against individuals with handicaps. *Giaccobbi v. Biermann,* 780 F. Supp. 33 (D.D.C. 1992). That statute requires the Department of Labor ("DOL") to "promptly" investigate complaints filed thereunder. DOL implementing regulations echoed the word "promptly." The Court of Appeals concluded that DOL had not complied with its duty to investigate promptly where the initial investigation took 14 months and the complete investigation took an additional two years. *Giaccobbi, supra,* 780 F. Supp. at 40. However, the plaintiff could not obtain any relief, because the DOL had already completed the investigation and concluded that no enforcement action was warranted by the time the plaintiff sued. (The decision whether to take enforcement action was held to be unreviewable.)

Based on the uncertainty inherent in the requirement to act "promptly," it would be very difficult for stakeholders to successfully enforce this requirement. But on the other hand, this very uncertainty may well subject EPA to more litigation than would occur with a clear and specific deadline, because each individual stakeholder could view EPA's action as insufficiently "prompt" based on his or her own evaluation, and decide to initiate litigation. And the lack of a "bright line" for deciding such cases may actually lead to unexpected rulings against EPA. Thus, replacing a clear deadline with a requirement to act "prompty" will cause uncertainty and unpredictable litigation.

⁴ In contrast, under EPA's existing deadlines, a claim for violation of the deadline may be brought to compel EPA to act. *Rosemere Neighborhood Ass'n v. EPA*, 581 F.3d 1169 (9th Cir. 2009).

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Conclusion

Based on the foregoing, we recommend that EPA not eliminate deadlines entirely, but rather revise them so that they are more realistic but still call for expeditious action. This approach will provide greater certainty and potentially less litigation for all stakeholders and for EPA.

Should you have any questions or wish to discuss these comments with us, please feel free to contact me at 909-396-2100 or <u>bwallerstein@aqmd.gov</u>. Thank you for your attention to our concerns.

Respectfully submitted,

Barry R. Wallerstein, D.Env. Executive Officer

BRW:BB:pa

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Attachments:	1)	2013 article in Psychology Today entitled	
	-	"Here's What Really Happens When You Extend a Deadline"	
	2)	EPA File No. 14R-06-R6 rejection letter (Jan. 26, 2009)	
	3)	EPA File No. 13R-12-R4 rejection letter (Dec. 07, 2012)	

ATTACHMENT 1



Heidi Grant Halvorson Ph.D. The Science of Success

Here's What Really Happens When You Extend a Deadline

Why we don't make good use of extra time, and how we can.

TWEFT

Posted Aug 23, 2013

SHARE

In June, the Obama administration <u>pushed back (http://www.whitehouse.gov/blog/2013/07/02/we-re-listening-businesses-about-health-care-law</u>) the deadline for employers with fifty or more workers to provide <u>health (/basics/health)</u> insurance for their employees by a full year—until Jan 1, 2015. Admittedly, the implementation of anything as complex as the Affordable Care Act is going to take time, and those involved have been working furiously to try to meet the <u>government</u> (<u>/basics/politics</u>)'s deadlines. So, at least with respect to this particular part of the ACA, everyone has an additional year to get everything just right. Sounds like a good thing, doesn't it?

EMAIL

Only - how furiously do you think everyone with this new, extended deadline is working now? Are they still burning the midnight oil... or are they saying to themselves, Let's take a breather. We've got plenty of time.

What happens when we move back deadlines—once we get past the initial feeling of sweet relief? Research suggests we have a lot of difficulty using our newly-found time wisely. We wind up facing the same problem again—the same time pressure, the same <u>stress (/basics/stress)</u>, the same feeling-not-quite ready—only now we've gone an additional week, or month, or year without reaching an important goal.

So why do we squander the time extensions we are given, and what can we do about it? The answer to the latter requires an <u>understanding (/basics/empathy)</u> of the former, so let's start there.

Like $\langle 104 \rangle$

MORE

Problem #1: We lose motivation (/basics/motivation)

It was first observed by researchers in the early part of the last century that one's motivation to reach a goal increases as one's distance from the goal decreases. Whether you are a salesperson trying to reach a sales target, or a rat running down a tunnel to get a piece of cheese, the closer you get to success, the more intensely you pursue it. Psychologists call this largely <u>unconscious (/basics/unconscious)</u> mechanism the "Goal Looms Larger Effect," meaning that the nearer you are to the finish line, the larger the goal "looms" in your mind—the more it dominates your thinking, and benefits from your attention.

Whenever you push back a deadline, you are increasing the distance once again between you and the finish line. Now, more urgent goals will loom large, and your original goal will languish in the back of your mind.

Problem #2: We procrastinate

In 2012, the IRS received over 10 million tax extension forms—a number that increases every year. Also increasing, according to Turbo Tax, is the number of people who wait until the last two weeks of tax season to file. What do we have to thank for these trends? E-filing. That's right — now that it is quicker and easier to file our taxes, or file for an extension, we are waiting even longer to do so. E-filing takes the pressure off, so it's easier for those with a tendency to procrastinate to delay.

But that's ok, because I work better under pressure, says the procrastinator. Well, I'm here to tell you that you don't. No one does. Psychologically, saying your work is better under pressure makes zero sense, because "pressure" is just another way of saying "just barely sufficient time to complete whatever I'm doing." How can less time help you do a better job? This is like claiming that you are more rested when you give yourself fewer hours to <u>sleep (/basics/sleep)</u>.

It's really far more accurate to say that if you are a procrastinator, you work because there is pressure. Without pressure, you *don't* work. Which is why pushing back a deadline is absolutely terrible for procrastinators. (Though naturally, they are usually the ones asking for extensions in the first place.)

Problem #3: We are terrible judges of how long things take

Here's What Really Happens When You Extend a Deadline | Psychology Today

Psychologists call this the planning fallacy—a pervasive tendency to underestimate how long it will take to do just about anything—and it can be attributed to several different <u>biases</u> (/basics/bias). First, we routinely fail to consider our own past experiences while planning. As any professor can tell you, most college seniors, after four straight years of paper-writing, still can't seem to figure out how long it will take them to write a 10-page paper.

Second, we ignore the very real possibility that things won't go as planned—our future plans tend to be "best-case scenarios." And as a consequence, we budget only enough time to complete the project if everything goes smoothly. Which it never really does.

Lastly, we don't think about all the steps or subcomponents that make up the task, and **consider how long each part of the task will take**. When you think about painting a room, you may picture yourself using a roller to quickly slap the paint on the walls, and think that it won't take much time at all—neglecting to consider how you'll first have to move or cover the furniture, tape all the fixtures and window frames, do all the edging by hand, and so on.

If you push back a deadline without addressing the poor time planning that landed you in hot water in the first place, you will likely end up in hot water again down the road.

How to Make Good Use of an Extended Deadline

If we want to solve Problems 1 & 2—keeping motivation high and keeping the pressure on for procrastinators—we need to find ways to shorten the distance between where we are now and where we want to end up. The most effective solution is to **impose interim deadlines**, effectively breaking a larger goal up into discrete sub-goals spaced out strategically in time. These deadlines need to be meaningful as well—if it's no big deal to miss the deadline, then it's not a real deadline.

Research by Dan Ariely and Klaus Wertenbroch suggests that many of us understand this implicitly. In one of their studies, students who had to turn in three papers by the semesters' end. Only 27% of them chose to submit all three on the last day—the majority established earlier deadlines for one or more of the papers voluntarily. In fact, roughly half the students chose to impose deadlines optimally, evenly-spacing them throughout the semester. Those that did turned in superior work and received higher grades. (So much for working best under pressure, eh?)

To solve Problem #3, you need to be very deliberate when it comes to project planning.

Here's What Really Happens When You Extend a Deadline | Psychology Today Specifically, you need to make sure you explicitly...

a) consider how long it has taken to complete a similar project in the past,

b) try to identify the ways in which things might not go as planned, and

c) break the project down, spelling out all the steps you will need to take to get it done, and estimating the time necessary to complete each step.

If it's not possible to set interim deadlines or make sure actions are taken to avoid the planning fallacy, then you really should try to avoid pushing back your deadline altogether. The odds are good that you'll have little to show for it but wasted time.

For more science-based strategies you can use to reach your goals and get happier and healthier, check out Succeed: How We Can Reach Our Goals (http://www.amazon.com/Succeed-How-Reach-Goals-ebook/dp/B00475AYJG/ref=pd_sim_b_4%22%20target=%22_hplink) and Nine Things Successful People Do Differently (http://www.amazon.com/Things-Successful-People-Differently-ebook/dp/B00607EX1E/ref=sr 1 1?s=books&ie=UTF8&gid=1343827717&sr=1-1&keywords=nine+things%22%20target=%22 hplink).

Trying to figure out where you go wrong when it comes to reaching your goals? Check out the free Nine Things Diagnostics (http://www.9thingsdiagnostic.com/%22%20target=%22_hplink).

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ATTACHMENT 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460



JAN 2 6 2009

OFFICE OF

Return Receipt Requested Certified Mail #7004-1160-0002-3622-5423 In Reply Refer to: EPA File No. 14R-06-R6

P.O. Box 1366 Texas City, TX 77592

Re: Rejection of Administrative Complaint

Dear

This letter is in response to your administrative complaint filed with the U.S. Environmental Protection Agency (EPA) Office of Civil Rights (OCR). Your complaint alleges that the Texas Commission on Environmental Quality (TCEQ), Galveston County Health District (GCHD), and EPA violated Title VI of the Civil Rights Act of 1964, as amended (Title VI), 42 U.S.C. §§ 2000d *et seq.*, and EPA's nondiscrimination regulations found at 40 C.F.R. Part 7. Your complaint was received by EPA on September 18, 2006. The complaint alleged that TCEQ, GCHD, and EPA discriminated against African Americans in Texas City, Texas by allowing exposure to toxic air pollution from Sterling Chemicals, Inc., and by not continuously monitoring air emissions from the Sterling Chemicals, Inc. facility.

Pursuant to EPA's nondiscrimination regulations, OCR conducts a preliminary review of discrimination complaints to determine acceptance, rejection, or referral. 40 C.F.R. § 7.120(d)(1). To be accepted for investigation, a complaint must meet the jurisdictional requirements described in EPA's nondiscrimination regulations. First, it must be in writing. Second, it must describe an alleged discriminatory act that, if true, may violate EPA's nondiscrimination regulations (*i.e.*, an alleged discriminatory act based on race, color, national origin, sex, or disability). Third, it must be filed within 180 calendar days of the alleged discriminatory act. Finally, it must be filed against an applicant for, or a recipient of, EPA financial assistance that committed the alleged discriminatory act. (A copy of EPA's nondiscrimination regulations is enclosed for your convenience.) As stated above, a complaint must be filed within 180 calendar days of the alleged discriminatory act. In a December 6, 2007, letter, OCR asked you to provide the date(s) of the alleged discriminatory acts described in your complaint. To date, you have not provided the information requested in that letter. Therefore, since the allegations in your complaint do not satisfy the jurisdictional requirements in EPA's nondiscrimination regulations, OCR must reject your complaint for investigation.

Finally, your complaint named EPA as one of the entities in violation of Title VI and EPA's nondiscrimination regulations. Title VI does not apply to the Federal government. Therefore, a Federal agency cannot be considered a "recipient" within the meaning of Title VI.¹ As a result, a Title VI complaint cannot be filed against EPA.

If you have any questions, please contact Anthony Napoli of my staff via Federal Relay Service 800-877-8339, and provide the relay operator his telephone number 202-233-0652. He may also be reached via electronic mail at <u>Napoli.Anthony@epa.gov</u>, or by mail at: U.S. EPA, Office of Civil Rights (Mail Code 1201A), 1200 Pennsylvania Ave., N.W., Washington, D.C. 20460-1000.

Sincerely,

Karen D. Higginbothain Director

Enclosure

 Mark R. Vickery, P.G., Executive Director Texas Commission on Environmental Quality Mail Code 109 P.O. Box 13087 Austin, TX 78711-3087

> Dr. Harlan Guidry, CEO Galveston County Health District P.O. Box 939 La Marque, TX 77568

Stephen G. Pressman, Associate General Counsel Civil Rights and Finance Law Office (2399A)

Sherry Brown-Wilson, Title VI Coordinator EPA Region 6

¹U.S. Department of Justice, Coordination and Review Section, "Title VI Legal Manual" (2001).

ATTACHMENT 3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



WASHINGTON, D.C. 20460

DEC 072012

OFFICE OF CIVIL RIGHTS

Return Receipt Requested

Certified Mail# 7009-2820-0002-1759-1261

In Reply Refer to: EPA File No.: 13R-12-R4

Herschel T. Vinyard Jr. Secretary Florida Department of Environmental Protection 3900 Commonwealth Boulevard M.S. 49 Tallahassee, Florida 32399-6575

<u>Re:</u> Rejection of Administrative Complaint

Dear Secretary Vinyard:

This letter is in response to the administrative complaint filed with the U.S. Environmental Protection Agency (EPA), Office of Civil Rights (OCR), against the Florida Department of Environmental Protection on July 24, 2012. The complaint alleges that the Florida Department of Environmental Protection (FDEP) violated Title VI of the Civil Rights Act of 1964, as amended (Title VI), 42 U.S.C. §§ 2000d *et seq.*, and EPA's nondiscrimination regulations implementing Title VI found at 40 C.F.R. Part 7 by compelling the Charlotte County Public Works Department to replace a drain sheet with a culvert, which has resulted in a disparate impact on the residents living at the end of Little Farm Road.

Pursuant to EPA's nondiscrimination regulations, OCR conducts a preliminary review of discrimination complaints to determine acceptance, rejection, or referral. 40 C.F.R. § 7.120(d)(1). To be accepted for investigation, a complaint must meet the jurisdictional requirements described in EPA's Part 7 regulations. First, it must be in writing. Second, it must describe an alleged discriminatory act that, if true, would violate EPA's nondiscrimination regulations (*i.e.*, an alleged discriminatory act based on race, color, national origin, sex, or disability). Third, it must be filed within 180 days of the alleged discriminatory act. Finally, the complaint must be filed against an applicant for, or a recipient of, EPA assistance that committed the alleged discriminatory act. (A copy of EPA's nondiscrimination regulations is enclosed for your convenience.)

To be accepted for investigation, a complaint must meet the jurisdictional criteria described above. The allegations in the complaint fail to meet these criteria and, the complaint must therefore be rejected for investigation. First, to be accepted for investigation, a complaint must be filed within 180 days of the alleged discriminatory act. The complaint alleges that the

action occurred on or about September 2002, which is outside of the 180 day limitation and is therefore untimely. Second, the complaint alleges that the replacing of the drain sheet with a culvert had a disparate impact on the residents of Little Farm Road by making the road impassable during periods of heavy rain. However, it does not allege that the action resulted in a disparate impact based on race, color, national origin or other protected basis. Thus the complaint does not allege a violation of EPA nondiscrimination regulations and OCR must reject this allegation for investigation.

If you have any questions, please contact Helena Wooden-Aguilar, Assistant Director, External Civil Rights at (202) 564-0792, via email at <u>wooden-aguilar.helena@epa.gov</u>, or via mail at U.S. EPA, Office of Civil Rights (Mail Code 1201A), 1200 Pennsylvania Avenue, N.W., Washington, D.C.. 20460.

afael lefen

Rafael DeLeon Director

Enclosure

cc: Ms. Naima Halim-Chestnut US EPA REGION 4 61 Forsyth Street, S.W. Mail Code: 9T25 Atlanta, GA 30303-8960

> Mr. Stephen G. Pressman, Associate General Counsel Civil Rights and Finance Law Office (MC 2399A)

1 Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 19

- PROPOSAL: Annual Meeting of the Brain & Lung Tumor and Air Pollution Foundation
- SYNOPSIS: This item is to conduct the annual meeting of the Brain & Lung Tumor and Air Pollution Foundation. The Foundation staff will present an annual report detailing the research supported by the Foundation over the past year, the Foundation's plans for the future, and a financial report.
- COMMITTEE: No Committee Review

RECOMMENDED ACTION:

Receive and file the annual report and ratify the Foundation disbursements described in the annual report.

Barry R. Wallerstein, D.Env. Executive Officer

KRW:ML

2016 Annual Report

1. Background

In February 2003, the Board established the Brain Tumor and Air Pollution Foundation. In March 2004 the Foundation amended its Articles of Incorporation to change its name to Brain & Lung Tumor and Air Pollution Foundation (Foundation) and to specify that its purpose is related to the effects of air pollution on brain tumors and lung cancer. The mission of the Foundation is to support research studies on the association between air pollution and brain and lung tumors, as well as research for the development of novel therapeutics for such tumors. To date the dollar amount of the funding received is \$8,222,568. The current projects are described in Section 3 below.

2. Directors and Officers

The Directors of the Foundation are:

Michael D. Antonovich, Chairman Ben Benoit, Vice Chairman Dr. Clark E. Parker, Sr. Dr. William A. Burke

The Board of Directors selected Ben Benoit as Vice Chairman on February 19, 2016.

The Foundation's staff is:

Barry Wallerstein, Chief Executive Officer Denise Whitcher, Secretary Michael O'Kelly, Treasurer

3. Report on the Foundation's Activities

Current Research Projects

Chronic Exposure of Mice to Ambient Particles to Study Cancer-Related Stem Cell Activation in the Brain (BTAP008) Principal Investigator: Keith Black, M.D., Cedars-Sinai Medical Center Approved Funding: \$1,000,000 Allocated Funding: \$500,000

This study (BTAP008), approved by the Foundation Board in September 2013, compares air pollution influence on animal model brain gene expression changes to a previous study (BTAP007, "The Impact of Air Pollution on Brain Stem Cell Activation"). The new study (BTAP008) was scheduled to be completed by the end of 2015. However, the unique biological materials collected from the previous study (BTAP007) were destroyed during a power outage. On June 17, 2015, the Foundation approved a no-cost extension of the agreement to May 1, 2016, to allow additional time to replicate the lost samples and to compare the samples from both studies. This research is being done in collaboration with investigators at UC Irvine.

Findings outlined in the latest progress report for BTAP008, dated February 16, 2016, include:

- The identification of 36 genes of potential interest relevant to central nervous system pathologies or some types of cancer, where gene expression appeared to differ when comparing mice who were exposed to air pollution versus those who breathed clean air for one year.
- Additional evidence that certain cancer stem cell markers were expressed more strongly in human Grade IV gliomas compared to lower grade gliomas and non-tumor brain tissues. Two of these stem cell markers also correlated with an increase in laminin beta-1 expression in the brain tumor tissues, so this protein

was used as a marker of blood vessel formation in tumor tissue. Blood vessels were found to be longer and more numerous in the higher grade tumors.

- Evidence that ultrafine particles were associated with increased blood pressure in mice, compared to those exposed to clean air for one year.

This work is still ongoing, including further investigation of genes involved in inflammatory response, expression of the cancer stem cell markers in the mouse brain tissues, and a comparison of the data for gene and stem cell markers expression from mice to those found in human brain tissues. Manuscripts resulting from this work are in preparation. The final report is due upon completion of the grant period.

4. Financial Report

The Foundation's fiscal year ended June 30, 2015. Financial statements were prepared by staff and audited by Simpson and Simpson, CPA's (Auditor). Total expenses for the fiscal year were \$1,259 and included audit fees (\$1,200), filing fees (\$30) and bank fees (\$29). The Auditor issued an unmodified opinion, indicating that the financial statements were presented fairly, in all material respects, and in accordance with generally accepted accounting principles.

As of January 31, 2016, the Foundation had a cash balance of 3,059,292. Following is an accounting of the Foundation's operations since its inception (7/23/03):

Revenue from Operations	
Contributions	\$8,222,568
Interest Income	40,321
Total Revenue from Operations	\$8,262,889
Operating Expenses	
Grants Awarded	
-Cedars-Sinai	\$4,809,250
-USC	377,967
Corporation Filing Costs	1,400
Bank charges	580
Professional fees-audit	14,400
Total Operating Expenses	\$5,203,597
Cash Balance	\$3,059,292

5. Plans for Upcoming Year

The Foundation will continue monitoring the progress of existing research projects. In June 2015, the SCAQMD Board authorized the transfer of \$2,500,000 from the Health Effects Research Fund to the Foundation. The Foundation has released an RFP to solicit research proposals within the purposes of the Foundation and a total of eight research proposals were received in response to the RFP. Staff is working toward convening the review committee to evaluate the proposed projects and the Foundation will consider providing funding as appropriate.

1 Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 20

REPORT: Legislative and Public Affairs Report

SYNOPSIS: This report highlights January 2016 outreach activities of Legislative and Public Affairs, which include: an Environmental Justice Update, Community Events/Public Meetings, Business Assistance, and Outreach to Business and Federal, State, and Local Government.

COMMITTEE: No Committee Review

RECOMMENDED ACTION: Receive and file.

Barry R. Wallerstein, D.Env. Executive Officer

LBS:DJA:MC:DM

BACKGROUND

This report summarizes the activities of Legislative and Public Affairs for January 2016. The report includes four major areas: Environmental Justice Update; Community Events/Public Meetings (including the Speakers Bureau/Visitor Services, Communications Center, and Public Information Center); Business Assistance; and Outreach to Business and Federal, State and Local Governments.

ENVIRONMENTAL JUSTICE UPDATE

The following are key environmental justice-related activities in which SCAQMD staff participated during the month of January 2016. These events involve communities that may suffer disproportionately from adverse air quality impacts.

January 14, 2016

- Staff attended the American Lung Association's State of the Air event in the Inland Empire. The discussion focused on current air quality trends and the latest research on health impacts of air pollution.
- Staff participated in the Inland Empire Asthma Coalition meeting in Colton. The group reviewed asthma studies for the Inland Empire and discussed service programs for youth who are sensitive receptors to air pollution.

January 16

• In coordination with SCAQMD's consultant, staff planned, organized and implemented outreach, event production, and logistics for the 2016 Martin Luther King, Jr. Day of Service Forum held at the California Science Center. The event promoted awareness and action on air quality and environmental justice issues, and was attended by over 400 elected officials, community leaders, and residents.

January 20

- Staff met with Michele Hasson, Regional Director of the Leadership Counsel in Coachella. Ms. Hasson shared information on the top environmental justice issues in Coachella Valley and discussed potential ways to collaborate on air quality events.
- Staff participated in the Coachella Valley Environmental Justice Enforcement Taskforce Meeting and while there learned about environmental justice issues affecting the region, including community concerns regarding construction of the Paradise Valley Development Project.

January 21

• Staff attended a Delhi Neighborhood Association Community Meeting in Santa Ana, and networked with community leaders who work with Santa Ana residents and indicated an interest in being part of the Environmental Justice Community Partnership Advisory Council and other environmental justice related events.

COMMUNITY EVENTS/PUBLIC MEETINGS

Each year SCAQMD staff engage with thousands of residents, providing valuable information about the agency, incentive programs, and ways individuals can help reduce air pollution through events and meetings sponsored solely by SCAQMD or in partnership with others. Attendees typically receive the following information:

- Tips on reducing their exposure to smog and its health effects;
- Clean air technologies and their deployment;
- Invitations or notices of conferences, seminars, workshops and other public events;
- SCAQMD incentive programs;
- Ways to participate in SCAQMD's rule and policy development; and
- Assistance in resolving air pollution-related problems.

SCAQMD staff attended and/or provided information and updates at the following events:

January 9

• SCAQMD Hearing Board Public Hearing for Aliso Canyon/Porter Ranch, Granada Hills.

January 10-14

• Transportation Research Board 95th Annual Meeting, Walter E. Washington Convention Center, Washington, D.C.

January 16

- SCAQMD Martin Luther King Jr. Day of Service Forum, California Science Center, Loker Conference Center, Los Angeles.
- SCAQMD Hearing Board Public Hearing for Aliso Canyon/Porter Ranch, Granada Hills.

January 18

• IECAAC 36th Annual Dr. Martin Luther King, Jr. Breakfast

January 23

• SCAQMD Hearing Board Public Hearing for Aliso Canyon/Porter Ranch, Woodland Hills.

January 30

• Wilmington Green Fair & Electric Vehicle Ride & Drive Event, Wilmington Municipal Building.

SPEAKERS BUREAU/VISITOR SERVICES

SCAQMD regularly receives requests for staff to speak on air quality-related issues from a wide variety of organizations, such as trade associations, chambers of commerce, community-based groups, schools, hospitals, and health-based organizations. SCAQMD also hosts visitors from around the world who meet with staff on a wide range of air quality issues.

January 19

• Fourteen students and staff from Soka University of America in Orange County visited SCAQMD headquarters where they received an overview from staff on air quality, the California Environmental Quality Act, and socioeconomics.

January 27

• Twelve members of a Chinese engineering delegation hosted by the EMZ Group in Azusa visited SCAQMD headquarters and received an overview from staff on air quality and environmental engineering.

COMMUNICATION CENTER STATISTICS

The Communication Center handles calls on the SCAQMD main line, 1-800-CUT-SMOG[®] line, the Spanish line, and after hours calls to each of those lines. Calls received in the month of January 2016 were:

Calls to SCAQMD's Main Line and	
1-800-CUT-SMOG [®] Line	3,955
Calls to SCAQMD's Spanish-language Line	14
Total Calls	3,969

PUBLIC INFORMATION CENTER STATISTICS

The Public Information Center (PIC) handles phone calls and walk-in requests for general information. Information for the month of January is summarized below:

Calls Received by PIC Staff	128
Calls to Automated System	1,144
Total Calls	1,272
Visitor Transactions	284
E-Mail Advisories Sent	8,864

BUSINESS ASSISTANCE

SCAQMD notifies local businesses of proposed regulations so they can participate in the agency's rule development process. SCAQMD also works with other agencies and governments to identify efficient, cost-effective ways to reduce air pollution and shares that information broadly. Staff provides personalized assistance to small businesses both over the telephone and via on-site consultation. The information is summarized below:

- Provided permit application assistance to 92 companies
- Conducted 1 free on-site consultation
- Issued 15 clearance letters

Types of businesses assisted

Auto Body Shops Engineering Firm Construction Firm Architecture Firm Dry Cleaners Gas Stations Restaurants Auto Repair Centers Furniture Refinishing Facilities Metal Fabrication Facility Printing Facilities Manufacturing Facilities

OUTREACH TO COMMUNITY GROUPS AND FEDERAL, STATE, AND LOCAL GOVERNMENTS

Field visits and/or communications were conducted with elected officials or staff from the following cities:

Anaheim	El Monte	Perris
Alhambra	Fountain Valley	Pomona
Aliso Viejo	Glendora	Rancho Cucamonga
Arcadia	Hemet	Rosemead
Azusa	Industry	Riverside
Baldwin Park	Jurupa Valley	San Bernardino
Beaumont	La Cañada Flintridge	San Dimas
Big Bear	La Puente	San Gabriel
Bradbury	La Verne	San Jacinto
Buena Park	Laguna Hills	Sierra Marion
Colton	Laguna Woods	Sierra Madre
Corona	Los Angeles	South El Monte
Covina	Loma Linda	South Pasadena
Coachella	Monrovia	Temple City
Claremont	Montclair	Tustin
Commerce	Monterey Park	Walnut
Diamond Bar	Moreno Valley	West Covina
Duarte	Norco	Yucaipa
Eastvale	Pasadena	_

Visits and/or communications were conducted with elected officials or staff from the following State and Federal Offices:

- U.S. Senator Barbara Boxer
- U.S. Senator Dianne Feinstein
- U.S. Congresswoman Karen Bass
- U.S. Congressman Ken Calvert
- U.S. Congressman Paul Cook
- U.S. Congresswoman Judy Chu
- U.S. Congresswoman Janice Hahn
- U.S. Congressman Steve Knight

- U.S. Congressman Ted Lieu
- U.S. Congressman Alan Lowenthal
- U.S. Congresswoman Grace Napolitano
- U.S. Congressman Ed Royce
- U.S. Congressman Raul Ruiz
- U.S. Congressman Adam Schiff
- U.S. Congressman Brad Sherman
- U.S. Congresswoman Lucille Roybal-Allard
- U.S. Congresswoman Linda Sanchez
- U.S. Congresswoman Loretta Sanchez
- U.S. Congressman Mark Takano
- U.S. Congresswoman Norma Torres
- U.S. Congresswoman Mimi Walters
- U.S. Congresswoman Maxine Waters
- State Senator Joel Anderson
- State Senator Ed Hernandez
- State Senator Roger Hernandez
- State Senator Bob Huff
- State Senator Carol Liu
- State Senator Holly Mitchell
- State Senator Mike Morrell
- State Senator Fran Pavley
- State Senator Richard Roth
- Assembly Member Cheryl Brown
- Assembly Member Ed Chau
- Assembly Member Tom Daly
- Assembly Member Chris Holden
- Assembly Member Young Kim
- Assembly Member Eric Linder
- Assembly Member Chad Mayes
- Assembly Member Jose Medina
- Assembly Member Melissa Melendez
- Assembly Member Reginald Jones-Sawyer
- Assembly Member Mark Ridley-Thomas
- Assembly Member Scott Wilk
- Assembly Member Don Wagner
- Assembly Member Marie Waldron

Staff represented SCAQMD and/or provided updates or a presentation to the following governmental agencies and business organizations:

Arcadia Chamber of Commerce Alhambra Chamber of Commerce Anaheim Chamber of Commerce Beaumont Chamber of Commerce California Air Resources Board California Legislative Black Caucus Coachella Valley Association of Governments Coachella Valley Unified School District Coachella Valley Mosquito and Vector Control District Coachella Valley Water District Coachella Branch Library Federal Highway Administration (FHWA) Gateway Cities Council of Governments Greater Riverside Chamber of Commerce Hemet/San Jacinto Valley Chamber of Commerce League of California Cities, Orange County Division Moreno Valley Chamber of Commerce **Orange County Council of Governments** Pasadena Chamber of Commerce **Redlands Chamber of Commerce** Riverside Transit Agency (RTA) **Riverside County Transportation Commission Riverside County Active Transportation Network Organization** San Bernardino Chamber of Commerce San Bernardino Associated Governments San Fernando Council of Governments San Gabriel Valley Economic Partnership San Gabriel Valley Council of Governments South Pasadena Chamber of Commerce Southern California Gas Company Southern California Association of Governments Southwest California Legislative Council

- Temecula Valley Chamber of Commerce
- Murrieta Chamber of Commerce
- Menifee Valley Chamber of Commerce
- Lake Elsinore Valley Chamber of Commerce
- Wildomar Chamber of Commerce

- Perris Valley Chamber of Commerce Transportation Research Board, Washington D.C.

Upland Chamber of Commerce

Western Riverside Council of Governments

Western Riverside County Clean Cities Coalition Western Riverside County Transportation NOW (RTA)

- Greater Riverside Chapter
- Hemet/San Jacinto Chapter
- Northwest Chapter
- Moreno Valley/Perris Chapter
- San Gorgonio Pass Chapter
- Southwest Chapter

Yucaipa Chamber of Commerce

Staff represented SCAQMD and/or provided updates or a presentation to the following community groups and organizations:

American Cancer Society, Inland Empire American Lung Association in California, Inland Empire **Beaumont Unified School District** Cabazon Band of Mission Indians, Indio Coachella Valley Environmental Justice Enforcement Taskforce Council of Mexican Federations, Coachella Inland Empire Asthma Coalition Leadership Council, Coachella Moreno Valley Unified School District Moreno Valley College **Riverside County Department of Public Health Riverside County Health Coalition Riverside Community Health Foundation** Porter Ranch Neighborhood Council, Los Angeles Save Porter Ranch Group, Los Angeles Salesian High School, Los Angeles Urban Conservation Corps of the Inland Empire University of California, Riverside Yvonne Burke Senior Center, Los Angeles



AGENDA NO. 21

BOARD MEETING DATE:March 4, 2016REPORT:Hearing Board Report

SYNOPSIS: This reports the actions taken by the Hearing Board during the period of January 1 through January 31, 2016.

COMMITTEE: No Committee Review

RECOMMENDED ACTION: Receive and file this report.

> Edward Camarena Chairman of Hearing Board

SM

Two summaries are attached: Rules From Which Variances and Orders for Abatement Were Requested in 2016 and January 2016 Hearing Board Cases.

The total number of appeals filed during the period January 1 to January 31, 2016 is 0.

	Rules fro	om whic	h Varian	ces and (Order for	Abateme	ents were	Reques	ted in 20 [°]	16				
	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
# of HB Actions Involving Rules							••••	••••						
109														0
109(c)														0
109(c)(1)														0
201														0
201.1														0
202														0
202(a)														0
202(b)														0
202(c) 203		1												1
203														0
203(a)														0
203(b)		4												4
204														0
208														0
218(c)(1)(B)(i)														0
218.1														0
218.1(b)(4)(C)														0
218(b)(2)														0
218(c)(1)(A)														0
218(d)(1)(A)														0
218(d)(1)(B)														0
219														0
219(s)(2)														0
221(b)														0
221(c)														0
221(d)														1
222														1
222(d)(1)(C)														0
222(e)(1)														0
401														0
401(b)														0
401(b)(1)														0
401(b)(1)(A)														0
401(b)(1)(B)		4												0
402		1												1
403														0
403(d)(1)														0
403(d)(1)(A)														0
404														0
404(a)														0
405														0
405(a)														0
405(b)														0
405(c)														0
407(a)														
407(a)(1) 409														0
40J														U

	Rules fro	om whic	h Varian	ces and (Order for	Abateme	nts were	Reques	ted in 20 [°]	16				
	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
410	2010	Jan	100	mai	- index	may	Juli	Jui	Aug	000	001	107	Dee	0
430(b)(3)(A)(iv)														0
431.1														0
431.1														0
431.1(c)(1)														0
431.1(c)(2)														0
431.1(c)(3)(C)														0
431.1(d)(1)														0
431.1(d)(1), Att A(1)														0
442														0
444														0
444(a)														0
444(c)														0
444(d) 461														0
461(c)(1)														0
461(c)(1)(A)														0
461(c)(1)(B)		_	_	_	_	_	_	_	_	_	_	_	_	0
461(c)(1)(C)														0
461(c)(1)(E)		_	_			_	_	_	_	_	_	_	_	0
461(c)(1)(F)(i)														0
461(c)(1)(F)(iv)														0
461(c)(1)(F)(v)														0
461(c)(1)(H)														0
461(c)(2)														0
461(c)(2)(A)														0
461(c)(2)(B)														0
461(c)(2)(C)														0
461(c)(3)														0
461(c)(3)(A)														0
461(c)(3)(B)														0
461(c)(3)(C)														0
461(c)(3)(D)(ii)														0
461(c)(3)(E)														0
461(c)(3)(H)														0
461(c)(3)(M)														0
461(c)(4)(B)														0
461(c)(4)(B)(ii)														0
461(d)(5)(A)														0
461(e)(1)														0
461(e)(2)														0
461(e)(2)(A)														0
461(e)(2)(A)(i)														0
461(e)(2)(B)(i)														0
461(e)(2)(C)														0
461(e)(3)														0
461(e)(3)(A)														0
461(e)(3)(C)(i)(l)														0

	Rules fro	m whic	h Varian	ces and (Order for	Abateme	nts were	Reques	ted in 20 ⁷	16				
													-	
	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
461(e)(3)(D)														0
461(e)(3)(E)		4	_	_	_	_	_	_	_	_	_	_	_	0
461(e)(5)		1												1
461(e)(7)		_	_	_	_	_	_	_	_	_	_	_	_	0
462														0
462(c)(4)(B)(i)														0
462(c)(7)(A)(ii)														0
462(d)														0
462(d)(1)														0
462(d)(1)(A)														0
462(d)(1)(A)(i)														0
462(d)(1)(B)														0
462(d)(1)(C)														0
462(d)(1)(E)(ii)														0
462(d)(1)(F)														0
462(d)(1)(G)														0
462(d)(5)														0
462(e)(1)														0
462(e)(1)(E)														0
462(e)(1)(E)(ii)														0
462(e)(1)(E)(i)(II)														0
462(e)(2)(A)(i)														0
462(e)(4)														0
462(h)(1)														0
463														0
463(c)														0
463(c)(1)														0
463(c)(1)(A)(I)-(iv)														0
463(c)(1)(B)														0
463(c)(1)(C)														0
463(c)(1)(D)														0
463(c)(1)(E)														0
463(c)(2)														0
463(c)(2)(B)														0
463(c)(2)(C)														0
463(c)(3)														0
463(c)(3)(A)														0
463(c)(3)(B)														0
463(c)(3)(C)														0
463(d)														0
463(d)(2)														0
463(e)(3)(C)														0
463(e)(4)														0
463(e)(5)(C)														0
464(b)(1)(A)														0
464(b)(2)														0
468														0
468(a)														0

	Rules from	n which	n Variano	ces and (Order for	Abateme	ents were	Reques	ted in 20 ⁴	16				
	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
468(b)	2010	Jan	100	mai	יקר	may	Juli	Jui	Aug	UCP	001	1107	Dee	0
1102														0
1102(c)(2)														0
1102(e)(1)														0
1102(f)(1)														1
1105.1														0
1105.1(d)(1)														0
1105.1(d)(1)(A)(iii)														0
1106(c)(1)														0
1106.1(c)(1)														0
1106.1(c)(1)(A)														0
1107(c)(1)														0
1107(c)(2)														0
1107(c)(7)														0
1107														0
1110.1														0
1110.2														0
1110.2(c)(14)														0
1110.2(d)														0
1110.2(d)(1)(A)														0
1110.2(d)(1)(R)														0
1110.2(d)(1)(B)(ii)														0
1110.2(d)(1)(D)														0
1110.2(d)(1)(E)														0
1110.2(e)(1)(A)														0
1110.2(e)(1)(B)(i)(II)														0
1110.2(e)(1)(B)(i)(III)														0
1110.2(e)(4)(B)														0
1110.2(f)														0
1110.2(f)(1)(A)														0
1110.2(f)(1)(c)														0
1113(c)(2)														0
1113(d)(3)														0
1118(c)(4)														0
1118(c)(5)														0
1118(d)(1)(2)														0
1118(d)(1)(2)														0
1118(d)(2)														0
1118(d)(3)														0
1118(d)(4)(B)														0
1118(d)(5)(A)														0
1118(d)(5)(B)														0
1118(d)(10)														0
1118(d)(12)														0
1118(e)														0
1118(f)(1)(C)														0
1118(g)(3)														0
1118(g)(5)														0

	Rules fro	om whicl	h Varian	ces and (Order for	Abateme	ents were	Request	ted in 20 [°]	16				
	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
1118(g)(5)(A)	2010	Jan	reb	iviai	Арі	way	Jun	Jui	Aug	Sep	001	NOV	Dec	0
1118(i)(5)(B)(i)														0
1118(i)(5)(B)(ii)														0
1118(j)(1)(A)(ii)														0
1118(j)(1)(B)(ii)														0
1118(j)(1)(C)														0
1121(c)(2)(C)														0
1121(c)(3)														0
1121(c)(6)														0
1121(c)(7)														0
1121(c)(8)														0
1121(e)(3)														0
1121(h)														0
1121(h)(1)														0
1121(h)(2)														0
1121(h)(3)														0
1122(c)(2)(A)														0
1122(c)(2)(X) 1122(c)(2)(E)														0
1122(d)(2)(2) 1122(d)(1)(A)														0
1122(d)(1)(K) 1122(d)(1)(B)														0
1122(d)(1)(D) 1122(d)(3)														0
1122(d)(3) 1122(e)(2)(A)														0
1122(e)(2)(R) 1122(e)(2)(B)														0
1122(e)(2)(D) 1122(e)(2)(C)														0
1122(e)(2)(D)														0
1122(e)(2)(D) 1122(e)(3)														0
1122(e)(3) 1122(e)(4)(A)														0
1122(e)(4)(B)														0
1122(g)(4)(b) 1122(g)(3)														0
1122(j)(3)														0
1122())														0
1124 1124(c)(1)(A)														0
1124(c)(1)(A) 1124(c)(1)(E)														0
1124(C)(1)(E) 1124(C)(4)(A)														0
1124(C)(4)(A) 1125(c)(1)														0
1125(c)(1)(C)														0
1125(d)(1)														0
1128(c)(1)														0
														0
1128(c)(2) 1130														0
1130(c)(1)														0
1130(c)(4)														0
1130(c)(4)														0
1131(d)														0
1132(d)(2)														0
1132(d)(3)														0
1133(d)(8) 1132 2(d)(8)														0
1133.2(d)(8)														0

	Rules fro	m whicl	h Varian	ces and (Order for	Abateme	nts were	Reques	ted in 201	16				
	2016	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
1134(c)		••••					0011		g	υσμ				0
1134(c)(1)														0
1134(d)														0
1134(d)(1)														0
1134(d)(2)(B)(ii)														0
1134(f)														0
1134(g)(2)														0
1135(c)(3)														0
1135(c)(3)(B)														0
1135(c)(3)(C)														0
1135(c)(4)														0
1135(c)(4)(D)														0
1136														0
1136(c)(1)(A)(i)														0
1137(d)(2)														0
1145														0
1145(c)(1)														0
1145(c)(2)														0
1145(g)(2)														0
1145(h)(1)(E)														0
1146														1
1146(c)(1)(A)														0
1146(c)(1(G)														2
1146(c)(1)(l)														1
1146(c)(2)														0
1146(c)(2)(A)														0
1146(d)(8)														0
1146.1														0
1146.1(a)(2)														0
1146.1(a)(8)														0
1146.1(b)(3)														0
1146.1(c)(1)														0
														0
1146.1(c)(2) 1146.1(d)(4)														0
1146.1(d)(4) 1146.1(d)(6)														0
1146.1(e)(1)														0
														0
1146.1(e)(1)(B) 1146.1(e)(2)														
1146.1(e)(2)														0
1146.2 1146 2(c)(1)														0
1146.2(c)(1)														0
1146.2(c)(4)														0
1146.2(c)(5)														0
1146.2(e)														0
1147														0
1147(c)(1)														0
1147(c)(10)														0
1147(c)(14)(A)														0
1147(c)(14)(B)														0

	Rules from w	hich Variar	ices and	Order for	Abateme	ents were	Reques	ted in 20 [°]	16				
	2016 Ja r	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
1150.1(d)(1)(C)(i)	2010 001	100	mai	- index	may	Juli	Jui	Aug	UCP	001	107	Dee	0
1150.1(d)(4)													0
1150.1(d)(5)													0
1150.1(d)(10)													0
1150.1(d)(11)													0
1150.1(d)(12)													0
1150.1(d)(13)													0
1150.1(d)(14)													0
1150.1(e)(1)													0
1150.1(e)(2)													0
1150.1(e)(3)													0
1150.1(e)(1)(B)(C)													0
													0
1150.1(e)(1)(C) 1151.1(e)(2)(B)(C)													0
1150.1(e)(2)(C)													0
1150.1(e)(3)(B)													0
1150.1(e)(3)(B)(C)													0
1150.1(e)(3)(C)													0
1150.1(e)(4)													0
1150.1(e)(6)(A)(I)												_	0
1150.1(e)(6)(A)(ii)													0
1150.1(f)(1)(A)(iii)(I)													0
1150.1(f)(1)(H)(i)													0
1151													0
1151(c)(8)													0
1151(2)													0
1151(5)													0
1151(d)(1)													0
1151(e)(1)													0
1151(e)(2)													0
1151(f)(1)													0
1153(c)(1)													0
1153(c)(1)(B)													0
1156(d)(5)(C)(i)													0
1158													0
1158(d)(2)													0
1158(d)(5)													0
1158(d)(7)													0
1158(d)(7)(A)(ii)													0
1158(d)(10)													0
1164(c)(1)(B)													0
1164(c)(2)													0
1166(c)(2)													0
1166(c)(2)(F)													0
1166, Part 12													0
1168													0
1168(c)(1)													0
1169(c)(13)(ii)													0

	Rules fro	m whic	h Varian	ces and (Order for	Abateme	ents were	Reques	ted in 20 ⁴	16				
	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
1171	2010	Jan	100	mai	- iqu	may	Jun	Jui	Aug	000	001	1107	Dee	0
1171(c)														0
1171(c)(1)														0
1171(c)(1)(A)(i)														0
1171(c)(1)(b)(i)														0
1171(c)(4)														0
1171(c)(5)														0
1171(c)(5)(A)(i)														0
1171(c)(6)														0
1173														0
1173(c)														0
1173(d)														0
														0
1173(e)(1)														
1173(f)(1)(B)		1												0
1173(g)(1)		1												0
1175														0
1175(c)(2)														0
1175(c)(4)(B)		_	_	_	_	_	_	_	_	_	_	_	_	0
1175(c)(4)(B)(i)														0
1175(c)(4)(B)(ii)														0
1175(c)(4)(B)(ii)(I)														0
1175(b)(1) (C)														0
1175(d)(4)(ii)(II)														0
1176														0
1176(e)														0
1176(e)(1)														0
1176(e)(2)														0
1176(e)(2)(A)														0
1176(e)(2)(A)(i)														0
1176(e)(2)(B)(v)														0
1176(f)(3)														0
1177(d)(2)(D)														0
1178(d)(1)(A)(xiii)														0
1178(d)(1)(A)(xiv)														0
1178(d)(1)(B)														0
1178(d)(1)(C)														0
1178(d)(3)(C)														0
1178(d)(3)(D)														0
1178(d)(3)(E)														0
1178(d)(4)(A)(i)														0
1178(g)														0
1186.1														0
1186.1														0
1189(c)(3)														0
1195														0
1195(d)(1)(D)														0
1303(a)														0
1303(a)(1)														0

	Rules fro	om whic	h Varian	ces and (Order for	Abateme	ents were	Reques	ted in 20 [°]	16				
	0040	1	5-1		A				A	0	0(D = 1	Takal Astisma
4202/k)/4)	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
1303(b)(1)														0
1401														0
1401(d)														0
1401(d)(1)(A)														0
1401(d)(1)(B)														0
1405(d)(3)(C)														0
1407(d)														0
1407(d)(1)														0
1407(d)(2)														0
1407(d)(5)		_	_	_	_	_	_	_	_	_	_	_	_	0
1407(f)(1)														0
1415(d)(3)														0
1418(d)(2)(A)														0
1420(d)(1)														0
1420.1(f)(3)														0
1420.1(g)(4)														0
1420.1(k)(13)(B)														0
1420.2(e)(1)(A)		1												1
1420.2(f)(1)		1												1
1420.2(f)(3)		1												1
1420.2(j)(2)		1												1
1421(d)(3)(A)														0
1421(e)(2)(c)														0
1421(e)(1)(A)(vii)														0
1421(e)(3)(B)														0
1421(h)(1)(A)														0
1421(h)(1)(B)														0
1421(h)(1)(C)														0
1421(h)(1)(E)														0
1421(h)(3)														0
1421(i)(1)(C)														0
1425(d)(1)(A)														0
1469														0
1469(c)														0
1469(c)(8)														0
1469(c)(11)(A)														0
1469(c)(13)(ii)														0
1469(d)(5)														0
1469(e)(1)														0
1469(e)(7)														0
1469(g)(2)														0
1469(h)														0
1469(I)														0
1469(j)(4)(A)														0
														0
1469(j)(4)(D) 1460(k)(2)(A)														
1469(k)(3)(A)														0
1470 1470(a)(2)(2)(i)(i)														0
1470(c)(2)(C)(i)(l)														0

	Rules fro	om whic	h Varian	ces and (Order for	Abateme	ents were	Reques	ted in 20 [°]	16				
	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
1470(c)(2)(C)(iv)														0
1470(c)(3)(B)(ii)		_		_	_	_	_	_	_	_	_	_	_	0
1470(c)(3)(C)(iii)														0
1470(c)(4)		_		_	_	_	_	_	_	_	_	_	_	0
1470(c)(4)(B)														0
1470(c)(5)		_		_	_	_	_	_	_	_	_	_	_	0
1470(d)(2)(B)														0
1470(e)(2)(A)		_	_	_	_	_	_	_	_	_	_	_	_	0
2004(c)(1)														0
2004(c)(1)(C)														0
2004(f)(1)		2												2
2004(f)(2)														0
2004(k)														0
2005														0
2009(b)(2)														0
2009(c)														0
2009(f)(1)														0
2009(f)(2)														0
2009.1														0
2009.1(c)														0
2009.1(f)(1)														0
2009.1(f)(2)														0
2009.1(f)(3)														0
2011														0
2011 Attachment C														0
2011(c)(2)														0
2011(c)(2)(A)														0
2011(c)(2)(B)														0
2011(c)(3)(A)														0
2011(e)(1)														0
2011(f)(3)														0
2011(g)														0
2011(g)(1)														0
2011(k)														0
2011(k) Appen. A, Chap. 2, except E & Attach C														0
2011(k) Appen. A, Chap. 2, Section A.3 a-c, A.5 and B	3. 1-4													0
and Appen. A, Chap. 2, Section C.2.a, c & d														0
2011, Appen. A, Attach. C, Section B.2.a.														0
2012 Chapter 2														0
2012 Attach. C, B.2.a														0
2012 Appen. A, Attach. C, Section B.2.														0
2012 Appen. A, Attach. C, Section B.2.a. & b.														0
2012 Appen. A														0
2012 Appen. A, Chap. 2														0
2012 Appen A, Chap. 2, Sec. A														0
2012 Appen A. Chap. 2. Sec. A(1)														0
2012 Appen A, Chap. 2, Sec. B														0
2012, Appen. A, Protocol 2012, Chap. 2, B.5.														0

R	ules fro	m whic	h Varian	ces and (Order for	Abateme	ents were	Request	ted in 201	16				
	2010	Jan	Feb	Mar	A	Max	Jun	Jul	A	Cam	Oct	Nov	Dec	Total Actions
2012, Appen A, Chap. 2, B.5.a	2016	Jan	rep	IVIAI	Apr	Мау	Jun	Jui	Aug	Sep	001	NOV	Dec	Total Actions
2012, Appen A, Chap. 2, B.10														0
2012, Appen A, Chap. 2, B.10 2012, Appen A, Chap. 2, B.11														0
2012, Appen A, Chap. 2, B.11 2012, Appen A, Chap. 2, B.12														0
2012, Appen A, Chap. 2, B.12 2012, Appen A, Chap. 2, B.17														0
2012, Appen A, Chap.2, B.17 2012, Appen A, Chap.2, B.18														0
														0
2012, Appen A, Chap.2, B.20 2012, Chapter 2, E.2.b.i.														
														0
2012, Chapter 2, E.2.b.ii.														0
2012 Appen A, Chap. 4.A.4														0
2012(B)(5)(e)														0
2012(c)(2)(A)		1												1
2012(c)(2)														0
2012(c)(3)														0
2012(c)(3)(A)														0
2012(c)(3)(B)														0
2012(c)(10)														0
2012(d)(2)														0
2012(d)(2)(A)														0
2012(d)(2)(D)														0
2012(f)(2)(A)														0
2012(g)(1)		1												1
2012(g)(3)														0
2012(g)(7)														0
2012(h)(3)														0
2012(h)(4)														0
2012(h)(5)														0
2012(h)(6)														0
2012(i)														0
2012(j)(1)														0
2012(j)(2)														0
2012, Protocol (Appen. A) Chap. 2, Part A.1.a														0
2012, Protocol (Appen. A) Chap. 2, Part B.4														0
2012, Protocol, (Appen A) Chap. 2, Part B.5.e														0
2012 Chapter 2, B.5.f														0
2012(m)														0
2012(m) Table 2012-1, and Appen. A, Chp 2, & Attachment C	2													0
2012(m) Appen. A, Attach. C														0
2012(m) Appen. A, Chap. 2, Sections 2.A.1 a-c, e.g,														0
and B. 1-4 and Appendix A, Chapter 3, Section C.2 a, c & d														0
2012(m) Appen. A, Chap 3, Section (A)(6)														0
2012(m) Appen. A, Chap 5, Para G, Table 5B and Att. D														0
22012(iii) Appen. A, Onap 3, 1 and 6, 1 able 3D and All. D														0
3002														0
3002(c)														0
		2												2
3002(c)(1) 2002(c)(2)		2												
3002(c)(2)														0
3004														0

Rules from which Variances and Order for Abatements were Requested in 2016														
	2016	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
Regulation II														0
Regulation IX														0
Regulation IX, 40 CFR Part 60, Subpart J														0
Regulation XI														0
Regulation XIII														0
H&S 39152(b)														0
H&S 41510														0
H&S 41700		1												1
H&S 41701														0
H&S 93115.6(c)(2)(C)(1)														0
H&S 42303														0
Title 13 Code of Regulations §2452														0

Report of January 2016 Hearing Board Cases

Case Name and Case No.	Rules	Reason for Petition	District Position/ Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
1. Air Liquide Large Industries US L.P. Case No. 5705-4 (M. Lorenz)	1173(g)(1)	Unable to stop non-VOC leak within grace period per Rule 1173.	Not Opposed/Granted	Ex Parte EV granted commencing 1/14/16 and continuing for 30 days or until the SV hearing currently scheduled for 2/2/16, whichever comes first.	None
2. Paramount Petroleum Corporation Case No. 2914-123 (T. Barrera)	202(c) 203(b) 2004(f)(1) 3002(c)(1)	Renewable fuels project startup problems continue. New catalyst ordered to address current NOx problem.	Not Opposed/Dismissed	EV dismissed for lack of good cause.	N/A
3. RAMCAR Batteries, Inc. Case No. 6039-1 (T. Barrera)	1420.2(e)(1)(A) 1420.2(f)(1) 1420.2(f)(3) 1420.2(j)(2)	Failed to complete source test by 12/31/15 as required.	Not Opposed/Granted	SV granted commencing 1/19/16 and continuing through 3/30/16.	Pb: .002 lb/day
4. SCAQMD vs. Southern California Gas Company Case No. 137-76 (N. Sanchez and N. Feldman)	402 H&S §41700	Odor nuisance from leaking underground natural gas storage well.	Stipulated/Issued	O/A issued commencing 1/23/16; the Hearing Board shall retain jurisdiction over this matter until 1/31/17.	N/A
5. Southern California Gas Company Case No. 137-77 (Consent Calendar; No Appearance)	203(b) 2004(f)(1) 2012(c)(2)(A) 2012(g)(1) 3002(c)(1)	Petitioner intends to install three new CEMS to replace ageing CEMS. To do so, petitioner must disconnect them from three gas turbines while turbines are not in service.	Not Opposed/Granted	SV granted commencing 1/21/16 and ending in accordance with Condition No. 2 of the Order, but in no event later than 4/19/16.	None
6. TNT C-Store Case No. 6040-1 (M. Reichert)	203(b) 461(e)(5)	GDF failed vent blockage test.	Not Opposed/Granted	SV granted commencing 1/21/16 and continuing through 3/30/16.	None
7. University of California, Irvine Case No. 4297-3 (S. Hanizavareh)	203(b)	Rain damage to electrical components caused failure of urea heater serving SCR which in turn caused failure of SCR serving cogen plant.	Not Opposed/Granted	Ex Parte EV granted commencing 1/6/16 and continuing through 1/12/16.	NOx: 97 lbs/day

Acronyms

AOC: Alternative Operating Conditions CEMS: Continuous Emissions Monitoring System ESP: Electrostatic Precipitator EV: Emergency Variance FCD: Final Compliance Date FCCU: Fluid Catalytic Cracking Unit GDF: Gasoline Dispensing Facility H&S: Health & Safety Code ICE: Internal Combustion Engine IV: Interim Variance MFCD/EXT: Modification of a Final Compliance Date and Extension of a Variance Mod. O/A: Modification of an Order for Abatement NOV: Notice of Violation NOx: Oxides of Nitrogen O/A: Order for Abatement Pb: Lead RATA: Relative Accuracy Test Audit RV: Regular Variance SCR: Selective Catalytic Reduction SV: Short Variance TBD: To be determined VOC: Volatile Organic Compounds



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 22

REPORT: Civil Filings and Civil Penalties Report

SYNOPSIS: This reports the monthly penalties from January 1 through January 31, 2016, and legal actions filed the General Counsel's Office from January 1 through January 31, 2016. An Index of District Rules is attached with the penalty reports.

COMMITTEE: Stationary Source, February 19, 2016, Reviewed

RECOMMENDED ACTION: Receive and file this report.

> Kurt R. Wiese General Counsel

KRW:lc

Violations

Civil Actions Filed

- 1 SOUTHERN CALIFORNIA GAS COMPANY Los Angeles County Superior Court Case Number: BC608322; Filed: 1.26.16 (KRW) P62646 R. 402 – Public Nuisance
- SAIB ALRABADI dba ARCO GLENDORA Alhambra Courthouse Case Number: 16G00066; Filed: 1.7.16 (PH) P62412 R. 461 - Gasoline Transfer and Dispensing

- ELIAS KHAWAN dba CENTURY OIL DYER, CIRCLE K UNION 76 Superior Court of Orange County Case Number: 30-2016-00828496-SC-CLC; Filed: 1.6.16 (PH) P62439 R. 203 – Permit to Operate R. 461 - Gasoline Transfer and Dispensing
- MERRIE SCOTT dba SCOTT TRACTOR SERVICE Superior Court County of San Bernardino, Fontana Courthouse Case Number: SMCFS1600265; Filed: 1.12.16 (PH) P62014 R. 403 – Fugitive Dust

4 Cases

4 Violations

Attachments

January 2016 Penalty Reports Index of District Rules and Regulations

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT General Counsel's Office

January 2016 Settlement Penalty Report

Total Penalties

Civil Settlements:	\$284,000.00
MSPAP Settlements:	\$42,550.00
Hearing Board Settlements:	\$14,700.00
Total Cash Settlements:	\$341,250.00
Total SEP Value:	\$0.00
Fiscal Year through January 2016 Cash Total:	\$1,871,227.00
Fiscal Year through January 2016 SEP Value Only Total:	\$0.00

FAC ID	COMPANY NAME	RULE NUMBER	SETTLED DATE	ATTY INT	NOTICE NO.	TOTAL SETTLEMENT
CIVIL SET	TLEMENTS:					
138740	21ST CENTURY OIL DYER,LLC/CIRC K UNIO	203, 461(C)(4)(B)(II)	01/27/2016 P	РН	P62439	\$1,500.00
174658	ARCO #83467	203 (A), 461	01/20/2016 P	РН	P60911	\$1,000.00
172253	HI TECH AUTO BODY	109, 203(A)	01/27/2016 P	РН	P59637	\$250.00
11818	HIXSON METAL FINISHING	203 203, 1469 1469 203 202 1402	01/27/2016 B	BTG	P53012 P53008 P53009 P53011 P63550 P53088	\$72,500.00
166488	LOS ANGELES MISSION COLLEGE	203(B), 1146.1	1/29/2016	NSF	P61716	\$5,000.00
163648	MARINA LINCOLN, INC.	461, 41960.2	1/7/2016	MJR	P61255	\$750.00
173290	MEDICLEAN	2004, 2012	1/27/2016	WBW	P61610	\$1,000.00
73367	MONARCH LITHO INC.	3003	1/7/2016	TRB	P60512	\$1,000.00
800408	NORTHROP GRUMMAN SYSTEMS	2004(F)(1), 3002(C)(1)	1/20/2016	TRB	P59376	\$1,000.00
121727	PACIFIC PIPELINE SYSTEM LLC	402, 41700	1/20/2016	TRB	P26999	\$5,000.00

20061	RAINBOW ENVIRONMENTAL SERVICES	402, 41700 402, 41700 410 402, 403 402	1/19/2016	KCM P53991 P53995 P53997 P51537 P45973	\$170,000.00
79682	RAMCAR BATTERIES INC	1407, 1420 1407, 1420 1407, 1420	1/5/2016	TRB P49171 P49170 P49172	\$25,000.00
TOTAL CIV	/IL SETTLEMENTS: \$284,000.00				
MSPAP SE	TTLEMENTS:				
175515	7ELEVEN #35346/BREE KHARIA	203(B), 41960.2 461(C), 461(C)(2)(B)	1/27/2016	P63015	\$1,000.00
158553	AARN INC, DBA H T 76 #1	461(C), 461(C)(2)(B) 41960.2	1/21/2016	P64263	\$550.00
174644	ARCO #42109	461(C), 41954, 41960.2	1/29/2016	P61272	\$300.00
173194	ARCO AM PM SAFAR & SAFAR BROS, INC.	461(C), 41960.2	1/27/2016	P59799	\$675.00
162093	CHEVRON STATIONS INC #202016	461 (E) (2)	1/29/2016	P63009	\$550.00
165678	CITY OF SAN DIMAS	203 (A)	1/27/2016	P60857	\$560.00
104641	CORRUKRAFT BUENA PARK	1146	1/29/2016	P63750	\$900.00
177354	DANA MART 2 INC	461, 461 (E) (2)	1/27/2016	P63002	\$200.00

70966	FOUR SEASONS HOTEL LA	203(B), 1146.1	1/19/2016	P60138	\$2,125.00
171905	GANAHL LUMBER	201, 203(A), 1470	1/27/2016	P60671	\$1,500.00
172416	GAREY 76	203(B), 461(C)(2)(B)	1/19/2016	P60942	\$1,000.00
178480	GAZ FOR LESS	203, 461	1/12/2016	P59789	\$1,000.00
67742	GLEN HAVEN MEMORIAL GARDENS	461	1/27/2016	P61320	\$850.00
132187	HOME DEPOT USA, INC., 3 E COMPANY	203 (B)	1/12/2016	P59677	\$2,100.00
174130	IMPERIAL ENERGY, SOUAD ELBAIALY	203 (A)	1/27/2016	P60844	\$400.00
172211	INLAND EMPIRE FOODS	1146.2	1/27/2016	P61196	\$300.00
166511	JOHN'S CLEANERS	201, 203(A), 1102	1/29/2016	P60667	\$500.00
6488	LA CO, SHERIFF'S DEPARTMENT	461, 3002	1/29/2016	P61324	\$1,450.00
127838	LAGUNA COOKIE COMPANY	203 (B)	1/6/2016	P63850	\$1,300.00
170730	LYON'S SERVICE		1/19/2016	P61269	\$600.00
180670	MB FUELING INC.	203 (A)	1/29/2016	P64253	\$425.00
148506	MCCAIN FOODS USA INC.	1146.2	1/6/2016	P64350	\$200.00
141429	MP GAS, INC/ PETRO EAGLE	461(C), 41954, 41960.2 461(C)(2)(B)	1/6/2016	P61275	\$650.00
144422	NESTLE WATERS NORTH AMERICA INC.	1146	1/29/2016	P64002	\$1,800.00

118089	ORANGE CARWASH INC	461(C), 461(C)(2)(B)	1/6/2016	P62448	\$600.00
169529	OXEL, INC.	461(C), 41954, 41960.2	1/12/2016	P61697	\$1,500.00
165182	PARAMOUNT OIL, INC. DBA ALONDRA 76	203, 461	1/21/2016	P60826	\$1,200.00
61499	PEM EXPRESS	461(C), 41954, 41960.2	1/29/2016	P61271	\$550.00
140445	ROY'S UNION 76 SERVICE	203, 461	1/12/2016	P60931	\$2,000.00
149887	SOUTH PASADENA UNIFEID HIGH SCHOOL	1146.2	1/21/2016	P64103	\$1,400.00
179544	SUNOIL RETAIL GROUP INC.	461(C), 41960.2	1/29/2016	P63205	\$900.00
175122	SUPERIOR NUT COMPANY	201, 203(A)	1/27/2016	P64100	\$1,600.00
171787	TESORO (USA) 63289	461	1/6/2016	P61676	\$715.00
171782	TESORO (USA) 63324	203 (B), 461(E)(1)	1/12/2016	P60949	\$150.00
175713	TONY JONES	461 (E) (3)	1/21/2016	P63062	\$300.00
113234	TORRANCE CAR WASH & GASOLINE SERVICE	203(B), 461	1/12/2016	P60809	\$1,800.00
113234	TORRANCE CAR WASH & GASOLINE SERVICE	203(B), 461	1/12/2016	P59347	\$1,100.00
5679	US GOVT, VETERANS ADMINISTRATION MED	1146, 3002	1/21/2016	P61322	\$4,500.00
58990	VALERO DLR, FLORENTINO C APELES	461(C), 461(C)(2)(B) 41954, 41960.2	1/19/2016	P61981	\$900.00

178733	WATERMAN FOOD STORE & GAS	461	1/19/2016		P63206	\$300.00
156551	WUTECH CALIFORNIA, INC.	461(C)(2)(B), 41960.2	1/19/2016		P64259	\$400.00
128183	YUCAIPA VALLEY GOLF CLUB	461	1/29/2016		P61561	\$1,700.00
TOTAL MS	PAP SETTLEMENTS: \$42,550.00					
HEARING I	BOARD SETTLEMENTS:					
131310	BECTON DICKINSON & CO, BD DISTRIBUTIO Hearing Board Case No. 6026-1 Facility will pay \$1,000/month penalty for the ongoing operation of the facility's ICE under stipulated Order for	203	1/20/2016	BTG	HRB2317	\$1,000.00
72040	KTLA INC Hearing Board Case No. 6027-1 Facility to pay \$100/month until non-compliant generator is removed from service and replaced with a compliant generator.	1470	1/7/2016	RRF	HRB2315	\$100.00
72040	KTLA INC Hearing Board Case No. 6027-1 Facility to pay \$100/month until non-compliant generator is removed from service and replaced with a compliant generator.	1470	1/20/2016	RRF	HRB2318	\$100.00
123715	STERLING INTERNATIONAL TOWERS Hearing Board Case No. 6029-1 Penalty for ongoing operation of the ICE engine during the terms of the stipulated Order for Abatement.	1470	1/20/2016	MJR	HRB2319	\$1,500.00

13990 US GOVT, VETERANS AFFAIRS MEDICAL CEN

Hearing Board Case No. 4280-3 Facility is under a stipulated order for abatement for operation of 3 boilers. Facility agreed to pay \$1,000/month that it operates the boilers out of compliance after June 5, 2015. The facility intends to seek an extension to the Order for an additional 6 months to complete the installation and operation of two boilers and will retain the 3rd boiler for standby use only. Penalty covers the period of July through December 2016.

TOTAL HEARING BOARD SETTLEMENTS: \$14,700.00

1470 1/19/2016 KCM HRB2316 \$12,000.00

DISTRICT RULES AND REGULATIONS INDEX FOR JANUARY 2016 PENALTY REPORTS

REGULATION I - GENERAL PROVISIONS

Rule 109 Recordkeeping for Volatile Organic Compound Emissions (Amended 8/18/00)

REGULATION II – PERMITS

List and Criteria Identifying Information Required of Applicants Seeking A Permit to Construct from the South Coast Air Quality Management - District (Amended 4/10/98)

- Rule 201 Permit to Construct (Amended 1/5/90)
- Rule 202 Temporary Permit to Operate (Amended 5/7/76)
- Rule 203 Permit to Operate (Amended 1/5/90)

REGULATION IV - PROHIBITIONS

- Rule 402 Nuisance (Adopted 5/7/76)
- Rule 403 Fugitive Dust (Amended 12/11/98) Pertains to solid particulate matter emitted from man-made activities.
- Rule 461 Gasoline Transfer and Dispensing (Amended 6/15/01)

REGULATION XI - SOURCE SPECIFIC STANDARDS

- Rule 1102 Petroleum Solvent Dry Cleaners (Amended 11/17/00)
- Rule 1146 Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (*Amended 11/17/00*)
- Rule 1146.1 Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (*Amended 5/13/94*)
- Rule 1146.2 Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers (Adopted 1/9/98)

REGULATION XIV – TOXICS

- Rule 1402 Control of Toxic Air Contaminants from Existing Sources (Amended 3/17/00) Rule 1407Control of Emissions of Arsenic, Cadmium, and Nickel from from Non-Ferrous Metal Melting Operations (Adopted 7/8/94)
- Rule 1420 Emissions Standard for Lead (Adopted 9/11/92)

- Rule 1469 Hexavalent Chromium Emissions From Chrome Plating and Chromic Acid Anodizing Operations (Adopted 10/9/98)
- Rule 1470 Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines

REGULATION XX REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

- Rule 2004 Requirements (Amended 5/11/01)
- Rule 2012 Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_X) Emissions (*Amended 5/11/01*)

REGULATION XXX - TITLE V PERMITS

- Rule 3002 Requirements (Amended 11/14/97)
- Rule 3003 Applications (Amended 3/16/01)

CALIFORNIA HEALTH AND SAFETY CODE § 41700

- 41954 Compliance for Control of Gasoline Vapor Emissions
- 41960.2 Gasoline Vapor Recovery

CALIFORNIA HEALTH AND SAFETY CODE § 41700

- 41700 Violation of General Limitations
- 41954 Compliance for Control of Gasoline Vapor Emissions
- 41960.2 Gasoline Vapor Recovery

t	Back	to	Agenda
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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 24

REPORT: Rule and Control Measure Forecast

SYNOPSIS: This report highlights SCAQMD rulemaking activities and public workshops potentially scheduled for the year 2016.

COMMITTEE: No Committee Review

RECOMMENDED ACTION: Receive and file.

Barry R. Wallerstein, D.Env. Executive Officer

PMF:JW:cg

The Rule and Control Measure Forecast Report provides the Board and interested parties with a monthly update of SCAQMD's rulemaking and control measure implementation schedule.

306	Plan Fees					
Rule 306 is being specifically called out in the schedule for May to make administrative changes. Regulation III was already scheduled for May.						
314	Fees for Architectural Coatings					
	eing removed from the Rule Forecast Report. It is not necessary to amend s time given the recent amendments to Rule 1113.					
415	Odors from Animal Rendering Facilities					
Proposed Rule 415 is moved from April to May to allow staff additional time to work with stakeholders.						

1304.2	Greenfield or Existing Electrical Generating Facility Fee for Use of Offsets for Load Serving Entities						
Proposed Rule 1304.2 is moved from May to June to allow more time to work with stakeholders.							
1304.3	Greenfield or Existing Electrical Generating Facility Fee for Use of Offsets for Municipalities						
Proposed Rul stakeholders.	Proposed Rule 1304.3 is moved from May to June to allow more time to work with stakeholders.						
1325	Federal PM2.5 New Source Review Program						
Ruling to recl	being added to the schedule for November to address U.S. EPA's Final assify the South Coast Air Basin from Moderate PM2.5 nonattainment area 12.5 nonattainment for the 2006 National Ambient Air Quality Standards.						
1466							
Rule 1466 is moved from April to September to allow staff time to complete the rule development process and work with stakeholders.							

2016 MASTER CALENDAR

Below is a list of all rulemaking activity scheduled for the year 2016. The last three columns refer to the type of rule adoption or amendment. A more detailed description of the proposed rule adoption or amendment is located in the Attachments (A through C) under the type of rule adoption or amendment (i.e. AQMP, Toxics, or Other).

*An asterisk indicates that the rulemaking is a potentially significant hearing. +This proposed rule will reduce criteria air contaminants and assist toward attainment of ambient air quality standards.

May	Title	AQMP	Toxics	Other
Reg. III	Fees			\checkmark
306	Plan Fees			\checkmark
415*	Odors from Animal Rendering Facilities			\checkmark
1110.2	Emissions from Gaseous- and Liquid- Fueled Internal Combustion Engines	\checkmark		
1142	Marine Tank Vessel Operations	\checkmark		
Reg. XX	RECLAIM	\checkmark		
June				
219	Equipment Not Requiring a Written Permit Pursuant to Regulation II			\checkmark
222	Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II			\checkmark
1304.2*	Greenfield or Existing Electrical Generating Facility Fee for Use of Offsets for Load Serving Entities			\checkmark
1304.3*	Greenfield or Existing Electrical Generating Facility Fee for Use of Offsets for Municipalities			\checkmark
1401	New Source Review of Toxic Air Contaminants		\checkmark	
1402	Control of Toxic Air Contaminants from Existing Sources		\checkmark	
1430.1*	Control of Toxic Air Contaminants from Grinding Operations at Metal Forging Facilities		\checkmark	

2016

2016 MASTER CALENDAR (continued)

2016 (continued)

July	Title	AQMP	Toxics	Other
430	Breakdown Provisions	\checkmark		
1148.2*	Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers			\checkmark
1148.3*	Requirements for Oil and Gas Wells and Commercial Suppliers			\checkmark
1168+	Adhesive and Sealant Applications (CTS-02)	\checkmark		
September				
416	Odors from Kitchen Grease Processing			
1111.1+	Reduction of NOx Emissions from Natural Gas Fired Commercial Furnaces (CMB-01)	\checkmark		
1420^{+}	Emissions Standard for Lead		\checkmark	
1466*	Toxic Air Contaminant Emissions from Decontamination of Soil		\checkmark	
October				
Reg. IX	Standards of Performance for New Stationary Sources (NSPS)	\checkmark		
Reg. X	National Emission Standards for Hazardous Air Pollutants (NESHAPS)		\checkmark	
1147	NOx Reductions from Miscellaneous Sources	\checkmark		
1426	Emissions from Metal Finishing Operations		\checkmark	
1469*	Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations		\checkmark	
November				
1136*,+	Wood Products Coatings (CTS-02)	\checkmark		
1325	Federal PM2.5 New Source Review Program			\checkmark
1450*	Control of Methylene Chloride Emissions		\checkmark	
2202	On-Road Motor Vehicle Mitigation Options			\checkmark

2016 MASTER CALENDAR (continued)

December Title Other AQMP Toxics 1138*,+ Control of Emissions from Restaurant $\sqrt{}$ Operations (BCM-01) $\sqrt{}$ 1407 Control of Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Operations $\sqrt{}$ Emissions Growth Management of Reg. XXIII^{*,+} Various Emissions Sources $\sqrt{}$ Reg. XL* Ensure AQMP Emission Reduction Targets Are Met at Commercial Marine Ports

2016 (continued)

2016 TO BE DETERMINED

TBD	Title	AQMP	Toxics	Other
Reg. II	Permits			
224	Incentives for Super-Compliant Technologies			\checkmark
1106 1106.1	Marine Coating Operations Pleasure Craft Coating Operations			
1107+	Coating of Metal Parts and Products (CTS-02)	\checkmark		
1118+	Control of Emissions from Refinery Flares	\checkmark		
1123+	Refinery Process Turnarounds (MCS-03)	\checkmark		
1133 Series	Composting and Related Operations			
1146 Series ^{*,+}	Emissions of Oxides of Nitrogen	\checkmark		
1150.1	Control of Gaseous Emissions from Municipal Solid Waste Landfills			\checkmark

2016 MASTER CALENDAR (continued)

2016 TO BE DETERMINED (continued)

TBD	Title	AQMP	Toxics	Other
1161+	VOC Reductions from Mold Release Agents (CTS-03)	\checkmark		
1171+	Solvent Cleaning Operations (CTS-02)	\checkmark		
1173+	Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants	\checkmark		
1177+	Liquefied Petroleum Gas Transfer and Dispensing (FUG-02)	\checkmark		
1188+	VOC Reductions from Vacuum Trucks (FUG-01)	\checkmark		
1190 Series ^{*,+}	Fleet Vehicle Requirements	\checkmark		
Reg. XIII	New Source Review			\checkmark
1403	Asbestos Emissions from Demolition/Renovation Activities		\checkmark	
1411	Recovery or Recycling of Refrigerants from Motor Vehicle Air Conditioners			\checkmark
1430*	Control of Toxic Air Contaminants from Metal Forging, Shredding, Grinding and Other Metal Processing Operations		\checkmark	
Reg. XVI	Mobile Source Offset Programs			\checkmark
1902	Transportation Conformity	\checkmark		
Reg. XXV	On-Road and Off-Road Mobile Source Credit Generation Program			\checkmark
Reg. XXVII	Climate Change			\checkmark

2016 MASTER CALENDAR (continued)

2016 TO BE DETERMINED (continued)

TBD	Title	AQMP	Toxics	Other
Reg. III, IV, IX, X, XI, XIV, XX, XXIII, XXX and XXXV Rules	Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or welfare, or to seek additional reductions to meet the SIP short-term measure commitment. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules listed in Table 1 of the December 4, 2015 Rule and Control Measure Forecast and new or amended rules to implement the 2012 AQMP measures in Table 2 of the December 4, 2015 Rule and Control Measure Forecast. The Clean Communities Plan (CCP) has been updated to include new measures to address toxic emissions in the Basin. The CCP includes a variety of measures that will reduce exposure to air toxics from stationary, mobile, and area sources (Table 3 of the December 4, 2015 Rule and Control Measure Forecast). Rule amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures.			
	Mobile and Indirect Source Measures	\checkmark	\checkmark	
	SIP Implementation	\checkmark		

AQMP Rule Activity Schedule

This attachment lists those control measures that are being developed into rules or rule amendments for Board consideration that are designed to implement the amendments to the 2012 Air Quality Management Plan.

May	
1110.2	Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines [Projected Emission Reduction: TBD] At the December 4, 2015 Governing Board meeting, the Board directed staff to return with proposed amendments regarding potential relief for a unique situation at one facility. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1142	Marine Tank Vessel Operations [Projected Emission Reduction: N/A] Revisions to Rule 1142 are proposed to address VOC emissions from marine tank vessel operations and provide clarifications. Susan Nakamura 909.396.3104 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
Reg. XX	RECLAIM [Projected Emission Reduction: TBD] At the December 4, 2015 Governing Board meeting, the Board directed staff to further analyze shutdown credits and bring a proposal for the Board's consideration. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
July	
430	Breakdown Provisions [Projected Emission Reduction: NA] This rule will be amended or replaced to address specific issues raised by U.S. EPA regarding start-ups or shut-downs associated with breakdowns. Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1168	Adhesive and Sealant Applications (CTS-02) [Projected Emission Reduction: TBD] Amendments to Rule 1168 will partially implement CTS-02 and reflect improvements in adhesive and sealant technology, as well as remove outdated provisions and include minor clarifications. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

AQMP Rule Activity Schedule (continued)

September		
1111.1	Reduction of NOx Emissions from Natural Gas Fired Commercial Furnaces [Projected Emission Reduction: TBD] Proposed Rule 1111.1 will establish equipment-specific nitrogen oxides emission limits and other requirements for the operation of commercial space heaters. Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155	
October		
Reg. IX	Standards of Performance for New Stationary Sources (NSPS)[Projected Emission Reduction: N/A]Proposed amendments will reflect all amendments by U.S. EPA to 40CFR, Parts 60 and 61 from January 1, 2015 to June 30, 2016.Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155	
1147	NOx Reductions from Miscellaneous Sources [Projected Emission Reduction: N/A] Amendments may be necessary to address findings of ongoing technology assessment. Joe Cassmassi 909.396.3155 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155	
November		
1136	Wood Products Coatings (CTS-02) [Projected Emission Reduction: TBD] Amendments to existing rule limits and other provisions. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155	
December		
1138	Control of Emissions from Restaurant Operations (BCM-01) [Projected Emission Reduction: TBD] Proposed amendments will seek to reduce PM2.5 and related emissions from under-fired charbroilers. Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155	

AQMP Rule Activity Schedule (continued)

December	(continued)
Reg. XXIII	Emissions Growth Management of Various Emissions Sources [Includes Proposed Rule 2301 - Projected Emission Reduction: Committed to reduce 0.5 tons per day of VOC, 0.8 tons per day of NOx, and 0.5 tons per day of PM2.5 in 2023.] Regulation XXIII will contain rules related to emissions growth management of various emission sources including, but not limited to, new or redevelopment projects and other sources where criteria pollutant emissions associated with the region's growth may cause or exacerbate exceedance of an air quality standard. Proposed rule(s) will implement the 2007 AQMP Control Measure EGM-01 – Emission Reductions from New or Redevelopment Projects and control measures identified in the 2016 AQMP. Proposed rules will consider the co-benefits of VOC, NOx, and PM 2.5 emission reductions from the 2012 and 2016 Regional Transportation Plan/Sustainable Communities Strategy and San Joaquin Valley Air Pollution Control District's Rule 9510 – Indirect Source Review to meet the "all feasible measures" requirement. Regulation XXIII may include other sources as provided in the Final 2016 AQMP to be submitted to U.S. EPA in July 2016. Henry Hogo 909.396.3184 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
Reg. XL	Ensure AQMP Emission Reduction Targets Are Met at Commercial Marine Ports [Projected Emission Reduction: TBD] Regulation XL will contain rules applicable to the region's commercial marine ports and to port-related emission sources that operating within or travel in and out of the ports. These sources include on-road heavy-duty trucks, ocean-going vessels, locomotives, commercial harborcraft, and cargo handling equipment. Regulation XL implements the 2007 AQMP Control Measure MOB-03, 2012 AQMP Control Measure IND-01, and control measures identified in the 2016 AQMP. Regulation XL may include other sources as provided in the Final 2016 AQMP to be submitted to U.S. EPA in July 2016. Henry Hogo 909.396.3184 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

AQMP Rule Activity Schedule (continued)

To-Be Determined	
1107	Coating of Metal Parts and Products (CTS-02) [Projected Emission Reduction: TBD] Potential amendments to Rule 1107 would further reduce VOC emissions and improve rule clarity and enforceability. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1118	Control of Emissions from Refinery Flares [Projected Emission Reduction: TBD] Amendments may be necessary to address findings from the additional analysis required by the adopting resolution for the last amendment. Amendments may also be necessary to implement an AB 32 measure. Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1123	Refinery Process Turnarounds (MCS-03) [Projected Emission Reduction: N/A] Proposed amendments will implement Control Measure MSC-03 of the 2007 AQMP by establishing procedures that better quantify emission impacts from start-up, shutdown or turnaround activities. Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1133 Series	Composting and Related Operations (BCM-10) [Projected Emission Reduction: TBD] Amendments may be proposed in conjunction with the 2016 AQMP. Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1146 Series	Emissions of Oxides of Nitrogen [Projected Emission Reduction: TBD] Amendments to Rules 1146, 1146.1, and 1146.2 may be necessary to respond to advancements in ultra-low NOx burner technology and selective catalytic reduction (SCR) applicability. Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1161	VOC Reductions from Mold Release Agents (CTS-03) [Projected Emission Reduction: TBD] The proposed rule will establish requirements for mold release products used in composite, fiberglass, metal and plastic manufacturing, and concrete stamping operations. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

AQMP Rule Activity Schedule (continued)

To-Be Determined	(continued)
1171	Solvent Cleaning Operations (CTS-02) [Projected Emission Reduction: TBD] The proposed amendments will review existing exemptions and include clarifications that may arise due to compliance verification activities or manufacturer and public input, including the sales prohibition clause. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1173	Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants [Projected Emission Reduction: TBD] Proposed revisions to Rule 1173 are being considered based on recent U.S. EPA Regulations. Susan Nakamura 909.396.3104 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1177	Liquefied Petroleum Gas Transfer and Dispensing (FUG-02) [Projected Emission Reduction: TBD] Potential amendments may be proposed to include additional sources of emissions from the dispensing and transfer of LPG. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1188	VOC Reductions from Vacuum Trucks (FUG-01) [Projected Emission Reduction: TBD] The proposed rule will establish VOC emission standards and other requirements associated with the operation of vacuum trucks not covered by Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing. Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1190 Series	Fleet Vehicle Requirements [Projected Emission Reduction: TBD] Amendments to Rule 1190 series fleet rules may be necessary to address remaining outstanding implementation issues and in the event the court's future action requires amendments. In addition, the current fleet rules may be expanded to achieve additional air quality and air toxic benefits. Dean Saito 909.396.2647 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1902	Transportation Conformity [Projected Emission Reduction: TBD]Amendments to Rule 1902 may be necessary to bring the District's Transportation Conformity rule in line with current U.S. EPA requirements. MacMillan 909.396.3244 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

AQMP Rule Activity Schedule (continued)

To-Be Determined	(continued)
Reg. IV, IX, X, XI, XIV, XIV, XX, XXX AND XXXV Rules	Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or welfare, or to seek additional reductions to meet the SIP short-term measure commitments and/or long-term emission reduction commitments. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules listed in Table 1 of the December 4, 2015 Rule and Control Measure Forecast and new or amended rules to implement the 2012 AQMP measures in Table 2 of the December 4, 2015 Rule and Control Measure Forecast.
	Mobile and Indirect Source Measures [Projected Emission Reduction: TBD] The District may adopt measures to limit emissions from mobile sources, both on-road and off-road (nonroad) sources, consistent with the Board's direction to counsel at the October 2014 meeting to explore the District's regulatory authority over mobile sources. These measures may include but are not limited to, transportation control measures, operational limits, fleet rules, credit generation rules, and indirect source rules, such as an indirect source rule for railyards and/or other sources which attract mobile sources. Henry Hogo 909.396.3184 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
	SIP Implementation [Projected Emission Reduction: TBD] The District may adopt additional measures to carry out the State Implementation Plan for PM2.5 or ozone, or other pollutants if required, as deemed necessary to meet commitments and federal requirements. Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

Toxics Rule Activity Schedule

This attachment lists those rules or rule amendments for Board consideration that are designed to implement the Air Toxics Control Plan.

June	
1401 1402	New Source Review for Toxic Air Contaminants Control of Toxic Air Contaminants from Existing Sources Revisions to Rule 1402 are proposed to add a voluntary risk reduction program for certain AB 2588 core facilities and other amendments to streamline and clarify provisions. Revisions to Rule 1401 are also proposed to revise procedures for adding and revising toxic air contaminants on the Rule 1401 list. <i>Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>
1430.1	Control of Toxic Air Contaminants from Grinding Operations at Metal Forging Facilities Proposed Rule 1430.1 will establish emission reduction requirements to control emissions from grinding operations at forging facilities. Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
September 1420	Emissions Standard for Lead In October 2008, U.S. EPA lowered the National Ambient Air Quality Standard (NAAQS) for lead from 1.5 to 0.15 ug/m3. Proposed Rule 1420 will establish requirements for lead-emitting sources that are not covered under Rules 1420.1 and Rule 1420.2 to ensure compliance with the lead NAAQS. <i>Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>
1466	Toxic Air Contaminant Emissions from Decontamination of Soil Proposed Rule 1466 would establish requirements to control toxic metal emissions from activities involving storing, handling and transporting soils with toxic metals. <i>Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>

Toxic Rule Activity Schedule (continued)

October	
Reg. X	National Emissions Standards for Hazardous Air Pollutants(NESHAPS)Proposed amendments will reflect all amendments by U.S. EPA to 40CFR, Parts 60 and 61 from January 1, 2015 to June 30, 2016.Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1426	Emissions from Metal Finishing OperationsProposed amendments to Rule 1426 will establish requirements to reducenickel, cadmium and other air toxics from plating operations.Susan Nakamura 909.396.3105CEQA: MacMillan 909.396.3244Socio: Cassmassi 909.396.3155
1469	Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing OperationsProposed Amended Rule 1469 will strengthen requirements to address potential fugitive emissions from hexavalent chrome plating and anodizing operations. Provisions to address changes to the U.S. EPA NESHAP may be needed to address use of perfluorooctane sulfonate (PFOS) in fume suppressants. Susan Nakamura 909.396.3104 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
November	
1450	Control of Methylene Chloride Emissions The proposed amendment is to reduce exposure to methylene chloride from furniture stripping, remove potential regulatory loopholes, achieve emission reductions where possible and cost effective, include reporting requirements, and clarify the rule language to improve consistency with other SCAQMD VOC rules. <i>Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>
December	
1407	Control of Emissions of Arsenic, Cadmium and Nickel from Non- Ferrous Metal Operations Proposed Rule 1407 will establish additional requirements to minimize air toxics from metal operations. Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

Toxic Rule Activity Schedule (continued)

To-Be Determined	
1403	Asbestos Emissions from Demolition/Renovation Activities Amendments to Rule 1403 will include specific requirements when conducting asbestos-emitting demolition/renovation activities at schools, daycares, and possibly establishments that have sensitive populations. Amendments may include other provisions to improve the implementation of the rule. Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1430	Control of Toxic Air Contaminants from Metal Forging, Shredding, Grinding and Other Metal Processing Operations Proposed Rule 1430 will establish emission reduction requirements for metal grinding operations. Susan Nakamura 909.396.3105 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
Reg. IV, IX, X, XI, XIV, XIV, XX, XXX and XXXV Rules	The Clean Communities Plan (CCP) has been updated to include new measures to address toxic emissions in the Basin. The CCP includes a variety of measures that will reduce exposure to air toxics from stationary, mobile, and area sources (Table 3 of the December 4, 2015 Rule and Control Measure Forecast). Rule amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures. In addition, rule developments/amendments may be needed to address revisions to the 2015 OEHHA Health Risk Guidelines.
	Mobile and Indirect Source Measures The District may adopt measures to limit emissions from mobile and indirect sources, both on-road and off-road (non-road) sources, consistent with the Board's direction to counsel at the October 2014 meeting to explore the District's regulatory authority over mobile sources. These measures may include but are not limited to, transportation control measures, operational limits, fleet rules, credit generation rules, and indirect source rules, such as an indirect source rule for railyards and/or other sources which attract mobile sources. <i>Henry Hogo</i> 909.396.3184 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

Other Rule Activity Schedule

This attachments lists rules or rule amendments for Board consideration that are designed to improve rule enforceability, SIP corrections, or implementing state or federal regulations.

May	
Reg. III	Fees This regulation is automatically updated to adjust specified fees by the California Consumer Price Index (CPI). Further amendments may be necessary if so directed by the Board in conjunction with the annual budget approval process. <i>Tracy Goss</i> 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
306	Plan FeesProposed amendments to Rule 306 are administrative changes, whichwill also clarify rule implementation.Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
415	Odors from Animal Rendering Proposed Rule 415 will provide protection to the public from odors created during animal rendering operations. The proposed rule will incorporate a preventative approach to odors by establishing Best Management Practices and will consider enclosure and odor control requirements for the receipt and processing of rendering material and wastewater. The proposed rule may also contain requirements for an Odor Mitigation Plan for continuing odor issues at facilities subject to the rule. <i>Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>
June	
219	Equipment Not Requiring a Written Permit Pursuant to Regulation II
222	Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II Amendments to Rules 219 and 222 may be proposed in tandem to exclude equipment with de minimis emissions from the requirement to obtain written permits by adding additional equipment categories to the streamlined file/registration program of Rule 222. <i>Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>

Other Rule Activity Schedule (continued)

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Other Rule Activity Schedule (continued)

2016

November	
1325	Federal PM2.5 New Source Review Program Amendments may be necessary to address U.S. EPA's Final Ruling to reclassify the Los Angeles South Coast Air Basin (South Coast) from Moderate PM2.5 nonattainment area to Serious PM2.5 nonattainment for the 2006 National Ambient Air Quality Standards. <i>Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>
2202	On-Road Motor Vehicle Mitigation Options Rule 2202 will be amended to streamline implementation while achieving the Rule's target emission reductions. <i>Carol Gomez</i> 909.396.3264 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155

To-Be Determined	
Reg. II	Permits
224	Incentives for Super-Compliant Technologies
	This regulatory effort will outline strategies and requirements to
	incentivize the development, establishment and use of super-compliant
	technologies. It may be considered as a part of Rule 219 amendments or
	proposed as a separate incentive Rule 224.
	Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

Other Rule Activity Schedule (continued)

To-Be Determined	(continued)
1106 1106.1	Marine Coating Operations Pleasure Craft Coating Operations (This item was previously submitted to the Board, but rejected. It will be brought back for Board direction.) The proposed amendment is two-fold: first, Rule 1106.1 is proposed to be rescinded and second, Rule 1106 will subsume the requirements of 1106.1, and revise VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings in order to align limits with U.S. EPA Control Techniques Guidelines and other California air districts, and adds new categories for marine aluminum antifoulant, mist, nonskid and organic zinc coatings and marine deck primer sealant. The proposed amendment also adds provisions for pollution prevention measures, enhanced enforceability, and to promote clarity and consistency. <i>Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>
1150.1	Control of Gaseous Emissions from Municipal Solid Waste Landfills Proposed amendments will address U.S. EPA revisions to the Standards of Performance for Municipal Solid Waste Landfills (NSPS) and Existing Guidelines and Compliance Timelines (EG) for Municipal Solid Waste Landfills, as well as CARB GHG requirements. <i>Tracy Goss 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>
Reg. XIII	New Source Review Amendments may be necessary to implement newly approved requirements or to address U.S. EPA comments on SIP approvability issues and/or requirements. Amendments may also be proposed for clarity and improved enforceability. <i>Tracy Goss</i> 909.396.3106 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
1411	Recovery or Recycling of Refrigerants from Motor Vehicle Air ConditionersThe proposed amendments to Rule 1411 will align with existing Clean Air Act Requirements to prevent the release of refrigerants during the servicing of motor vehicle air conditioning systems, address other clarifications, and enhance enforceability.Philip Fine 909.396.2239 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155

Other Rule Activity Schedule (continued)

To-Be Determined	(continued)
Reg. XVI	Mobile Source Offset Programs Amendments to various Regulation XVI rules will be proposed to address the recent U.S. EPA proposed disapproval of such rules including Rule 1610. Henry Hogo 909.396.3184 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
Reg. XXV	On-Road and Off-Road Mobile Source Credit Generation Programs Regulation XXV will contain rules to allow generation of criteria pollutant mobile source emission reduction credits from various on-road and off-road sources, such as on-road heavy-duty trucks, off-road equipment, locomotives, and marine vessels. Credits will be generated by retrofitting existing engines or replacing the engines with new lower- emitting or zero-emission engines. <i>Henry Hogo</i> 909.396.3184 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155
Reg. XXVII	Climate Change Changes may be needed for Regulation XXVII to add or update protocols for GHG reductions, and other changes may be needed. <i>Jill Whynot 909.396.3104 CEQA: MacMillan 909.396.3244 Socio: Cassmassi 909.396.3155</i>
Reg. IV, IX, X, XI, XIV, XX, XXX and XXXV Rules	Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or welfare, or to seek additional reductions to meet the SIP short-term measure commitment. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules listed in Table 1 of the December 4, 2015 Rule and Control Measure Forecast and new or amended rules to implement the 2012 AQMP measures in Table 2 of the December 4, 2015 Rule and Control Measure Forecast. The CCP has been updated to include new measures to address toxic emissions in the Basin. The CCP includes a variety of measures that will reduce exposure to air toxics from stationary, mobile, and area sources (Table 3 of the December 4, 2015 Rule and Control Measure Forecast). Rule amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures.



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 25

PROPOSAL: Rule 1147 Technology Assessment

- SYNOPSIS: At its September 9, 2011 meeting, the SCAQMD Board amended Rule 1147 – NOx Reductions from Miscellaneous Sources. The rule requires staff to conduct a technology assessment and report to the Board on the availability of burner systems and heating units for processes with NOx emissions of one pound per day or less. The draft technology assessment considers potential changes to Rule 1147 for specific categories of equipment based on analysis of technical feasibility and cost effectiveness. Staff has proposed to hire a third party to review the draft Technology Assessment, report findings to Rule 1147 stakeholders and incorporate the reviewer's comments. This action is to receive and file the draft Rule 1147 Technology Assessment.
- COMMITTEE: Stationary Source, November 20, 2015; February 19 and January 22, 2016, Reviewed

RECOMMENDED ACTION: Receive and file.

Barry R. Wallerstein, D. Env. Executive Officer

PF:JC:GQ:WB

Background

Rule 1147 – NOx Reductions from Miscellaneous Sources, was adopted by the SCAQMD Board on December 5, 2008 with a compliance schedule phased in over 10 years. Rule 1147 incorporates two control measures of the 2007 AQMP: CMB-01 – NOx Reductions from Non-RECLAIM Ovens, Dryers and Furnaces and MCS-01 – Facility Modernization. Control Measure MCS-01 proposed that existing in-use equipment meet best available control technology (BACT) emission limits in place at the time the AQMP was adopted. Control Measure CMB-01 proposed emission NOx limits in the range of 20 ppm to 60 ppm for ovens, dryers, kilns, furnaces and other

combustion equipment. Emission reductions from the equipment addressed by Rule 1147 and Control Measure CMB-01 of the 2007 AQMP were also proposed in prior AQMPs.

Rule 1147 was amended September 9, 2011 to delay implementation dates up to two years, remove a requirement for fuel or time meters and provide compliance flexibility for small and large sources. In addition, the rule includes a requirement for a technology assessment on the availability of low NOx burner systems for processes with NOx emissions of one pound per day or less and that are not typically subject to a BACT requirement as new sources. The technology assessment also includes an evaluation of cost and cost effectiveness for small and low emission sources.

Technology Assessment

Initially the SCAQMD technology assessment targeted sources in which burner technology was either not available or the retrofit cost was comparable to the cost of replacing the unit. Several categories of equipment were identified and removed from Rule 1147 and the requirement for a permit through the May 2013 amendments to SCAQMD Rules 219 and 222. Staff continued its technical evaluation and developed Rule 1153.1 – Emissions of Oxides of Nitrogen from Commercial Food Ovens to move existing in-use food ovens, roasters and smokehouses from Rule 1147 into their own rule. Rule 1153.1 was adopted on November 7, 2014 and provided more appropriate temperature ranges for defining emission limits, food oven specific emission limits, later compliance dates and an exemption for small units.

The last phase of the technology assessment focuses on the remaining categories of small and low emission equipment that were not addressed through the Rule 219, 222 and 1153.1 rulemaking efforts. While the focus of this report is on equipment with NOx emissions of 1 pound per day or less, the report also includes information and analysis applicable to larger units. This information is provided in order to address stakeholders' concerns regarding the availability of technology for larger equipment.

This assessment utilizes information on affected equipment from the SCAQMD permit system, New Source Review and Rule 1147 emissions testing programs, and from discussions with equipment and burner manufacturers, affected businesses, consulting engineers and industry representatives. The technology assessment provides information on the types and number of equipment affected by Rule 1147, emissions characteristics of this equipment and estimates of the cost and cost effectiveness of replacing existing older combustion systems. This information provides insight into compliance and affordability challenges faced by businesses affected by Rule 1147.

With the exception of a few categories of equipment, the technology review demonstrates that low NOx burner systems are available for every category of equipment subject to Rule 1147 and have been since the late 1990's. However, staff has

identified the following three types of equipment for which burners are not readily available or cannot be retrofitted: 1) low temperature ovens and dryers with heat inputs of less than 325,000 Btu per hour (0.325 mmBtu/hour); 2) existing heated process tanks, evaporators and parts washers; and 3) low temperature burn-off ovens and incinerators.

Cost and Cost Effectiveness

The staff report for the adoption of Rule 1147 in 2008 reviewed costs for a wide range of equipment with heat inputs from less than 1 million Btu per hour to over 20 million Btu per hour. That analysis of cost and cost effectiveness was averaged over a wide range of burner sizes. However, most of the equipment subject to Rule 1147 requirements have heat inputs less than 4 million Btu per hour, and burners used in Rule 1147 equipment are typically smaller than 2 million Btu per hour. The most common burner size in Rule 1147 equipment is about 1 million Btu per hour. Most of the burner sizes analyzed in the 2008 staff report are larger and rarely used in equipment subject to Rule 1147. The burner sizes evaluated in 2008 are more likely to be found in units at RECLAIM facilities.

In the 2008 Rule 1147 staff report, the average cost effectiveness for replacing the smallest burners with the lowest potential NOx emission reductions was estimated to be about \$22,400 per ton (adjusted to 2015 dollars). In the current analysis, the cost effectiveness of replacing burners and other components in small and low emission units varies widely. It is highly dependent upon how often a unit is used, which determines potential emission reductions. Staff estimates that a cost effectiveness range of \$15,000 to \$46,000 per ton is typical for retrofits of small and low emission equipment. However, retrofits of specific types of low emission equipment could result in cost effectiveness as high as \$88,000 per ton of NOx reduced.

Staff has used the current SCAQMD BACT Guidelines criteria of \$27,000 per ton for equipment that does not have a defined BACT as a guide to evaluate the cost effectiveness of low NOx retrofits for Rule 1147 equipment. Based on this analysis, staff is suggesting a delay of the requirements for equipment with NOx emissions of 1 pound per day or less until the equipment is modified, relocated or replaced with a new unit. This delay would include all spray booths and most small ovens and furnaces. Staff estimates that 4,900 to 5,650 out of 6,400 Rule 1147 units would be affected by this proposal.

Recommendations

As a result of this technology assessment, the following changes are proposed for consideration:

- Exempt sources with total rated heat input less than 325,000 Btu per hour from the Rule 1147 NOx emission limit.
- Change the NOx emission limit from 30 ppm to 60 ppm NOx for the primary chamber for all burn-off ovens, burnout furnaces and incinerators.
- Delay compliance for existing in-use heated process tanks, evaporators and parts washers from the NOx emission limit until the combustion system or tank is modified, replaced or relocated.
- Delay compliance with the NOx emission limit for existing in-use spray booths until the heating system is modified or replaced or the unit is relocated.
- Delay compliance with the NOx emission limit for existing in-use units with actual NOx emissions of one pound per day or less until the combustion system is modified or replaced or the unit is relocated.

Comments Received

Staff held a meeting of the Rule 1147 Task Force on February 17, 2016 to receive comments on a draft copy of the Technology Assessment that was released for public review. Staff also received comments in a letter from Furnace, Dynamics, Incorporated sent to SCAQMD staff on February 18, 2016. Stakeholders also provided comments at the Stationary Source Committee meeting on February 19, 2016. The attached Draft Technology Assessment does not yet include a discussion of these comments, but staff will incorporate these comments, other stakeholder's comments, contractor suggestions and staff responses into the next draft of the technology assessment, after the contractor meets with stakeholders.

The comments received at the Rule 1147 Task Force Meeting, in the comment letter and at the Stationary Source Committee focused on staff's initial recommendations and potential future rule amendments including: additional criteria for identifying low emission units, providing long term mitigation options, delaying compliance dates, and individual cost effectiveness calculations for every permit application. Another major category of comments dealt with rule implementation by SCAQMD Engineering and Compliance, including permit application review time, changing how potential emissions are estimated under new source review, and postponing Rule 1147 enforcement actions. There were a few comments received by letter and one comment at the committee meeting on the analysis of cost effectiveness in the technology assessment. These comments will be incorporated into the final document and discussed with stakeholders and the contractor prior to presenting the draft final technology assessment to the Stationary Source Committee.

Key stakeholder requests and staff responses are summarized in the table below:

Stakeholder Requests and Staff Response					
 Delay compliance or exempt small and low emission units 	Agree: Exempt small units and delay for low emission units				
Change emission limit for burn-off ovens	 Agree: Raise emission limit for primary chamber 				
 Exempt existing in-use heated process tanks 	 Agree: Delay compliance until modified, replaced or moved 				
 Delay compliance for existing in-use spray booths 	 Agree: Delay compliance for low emission booths until modified, replaced or moved 				
 Provide more options for demonstrating low emissions other than default PTE 	 Rule currently allows options requested, but staff will clarify in rule and provide additional guidance 				
 Provide different exemption criteria for some equipment, including a 400,000 Btu/hr threshold and a pound per day measurement based on fuel usage 	 Staff will work with stakeholders to evaluate alternatives 				

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Future Activity

Staff will continue working with members of the Rule 1147 Task Force and other stakeholders to collect additional information regarding the feasibility and cost of replacing combustion systems in equipment subject to Rule 1147. Staff will release a Request for Proposals to hire a third-party consultant to review the technology assessment and report back to the Rule 1147 Task Force. Staff has invited stakeholders to participate in the contractor selection process, and the contractor will present draft findings at a future Rule 1147 Task Force meeting, receive feedback and answer questions. The results of the contractor analysis and staff response will be reported back to the Stationary Source Committee with a draft final assessment and a list of actions to consider for future rule amendment.

Attachment

Draft Technology Assessment for Rule 1147 Small and Low Emission Sources

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Technology Assessment for Rule 1147 Small and Low Emission Sources

February 2016

Deputy Executive Officer Planning, Rule Development, and Area Sources Philip M. Fine, Ph.D.

Assistant Deputy Executive Officer Planning, Rule Development, and Area Sources Jill Whynot

Planning and Rules Director Planning, Rule Development, and Area Sources Joe Cassmassi

Author:

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Background

SCAQMD Rule 1147 – NOx Reductions from Miscellaneous Sources was adopted in December 2008 and is an important component of the attainment strategy to meet the federal annual PM2.5 ambient air quality standard as well as meet the ozone standard. The rule regulates NOx emissions from combustions sources that were not addressed by SCAQMD rules other than Rule 474 – Fuel Burning Equipment - Oxides of Nitrogen. Rule 474 was last amended in 1981 and limits NOx emissions rates from equipment burning gaseous fuels to 125 ppm and equipment burning liquid and solid fuels to 225 ppm (at 3% oxygen). Many categories of equipment used in a wide variety of processes are now regulated by Rule 1147. However, similar equipment can have a wide range of operating characteristics, process temperatures and emissions rates. Because of the number and variety of equipment affected, the rule compliance schedule was phased in over 10 years starting in 2010.

Rule 1147 was amended September 2011 to address compliance challenges, remove a requirement for fuel or time meters, delay compliance dates and provide regulatory relief to affected businesses. Throughout the rule amendment process, discussions with affected businesses, equipment manufacturers, and installers focused on concerns that there were many unique pieces of equipment and on the availability of cost effective and affordable low NOx technology. A major concern was the impact of the rule on small and low use equipment with NOx emissions of one pound per day or less. To address this challenge, the amended rule provided two solutions: first, sources with daily emissions rates less than or equal to one pound per day were given a delay of up to two years (until 2017 at the earliest) before they were required to comply with emission limits. These small and low emission units originally had compliance dates five years later than larger units. Second, Rule 1147 included a requirement that staff perform a technology assessment for these small and low emission sources that are not typically subject to the best available control technology (BACT) requirement as new sources.

Technology Assessment

Initially the technology assessment targeted sources where burner technology was either not available or the retrofit cost is comparable to the cost of replacing the unit. Several categories of equipment were identified and removed from Rule 1147 and the requirement for a permit through the May 2013 amendments to SCAQMD Rules 219 and 222. Staff continued its technical evaluation and developed Rule 1153.1 – Emissions of Oxides of Nitrogen from Commercial Food Ovens to move existing in-use food ovens, roasters and smokehouses from regulation by Rule 1147 into their own rule. Rule 1153.1 was adopted in November 2014 and provided more appropriate temperature ranges for defining emission limits, food oven specific emission limits and later compliance dates. In addition, Rule 1153.1 provided a small source exemption for existing in-use units with emissions of up to one pound per day.

The last phase of the technology assessment focuses on the remaining categories of Rule 1147 equipment that were not addressed through the Rule 219, 222 and 1153.1 actions. This assessment utilizes information on affected equipment from the SCAQMD permit system, SCAQMD emissions testing programs and discussions with equipment and burner manufactures, affected businesses, consulting engineers and industry and business representatives. This report provides information on the types and number of equipment affected by Rule 1147, emission characteristics of these equipment and estimates of the cost and cost effectiveness of replacing old burners. Taken together, this information provides insight into compliance and affordability challenges faced by businesses affected by Rule 1147. While the focus of this report is on equipment with NOx emissions of 1 pound per day or less, the report also includes information and analysis applicable to larger units. This information is provided in order to address stakeholder's concerns regarding the availability of technology for larger equipment.

Staff conducted extensive outreach to equipment manufacturers and product installers. Staff went into the field to identify equipment that will comply with Rule 1147 emission limits with available burners and those that may not. Rule development staff has worked closely with industry representatives and other staff to develop solutions to unique compliance challenges. These discussions resulted in a number of proposals to staff that are included in this report.

Ten major categories of equipment were evaluated through the technology assessment including: afterburner technologies, spray booths, crematories, fryers, heated process tanks, metal melting furnaces, heat treating, multi-chamber burn-off ovens and incinerators, ovens and dryers. As a result of this assessment, the following five recommendations are proposed for consideration in future rule development:

- Exempt sources with total rated heat input less than 325,000 Btu per hour from the Rule 1147 NOx emission limit
- Change the NOx emission limit from 30 ppm to 60 ppm NOx for the primary chamber of all multi-chamber burn-off ovens, burn-out furnaces and incinerators for all process temperature
- Delay compliance for existing in-use heated process tanks, evaporators and parts washers from the NOx emission limit until such time the combustion system or tank is modified, replaced or relocated
- Delay compliance with the NOx emission limit for existing in-use spray booths until the heating system is modified or replaced or the unit is relocated
- Delay compliance with the NOx emission limit for existing in-use units with actual NOx emissions of one pound per day or less until the combustion system is modified or replaced or the unit is relocated

Staff estimates that 4,900 to 5,650 out of 6,400 units would be affected by these proposed changes. Staff will continue working with members of the Rule 1147 Task Force and other

stakeholders to collect additional information regarding the feasibility and cost of replacing combustion systems in equipment subject to Rule 1147. Staff will release a Request for Proposals (RFP) to hire a third-party consultant to review the technology assessment and report back to the Rule 1147 Working Group. Staff has invited stakeholders to participate in the contractor selection process. The results of the contractor analysis and staff response will be reported back to the Stationary Source Committee with a list of actions to consider for future rule amendment.

BACKGROUND

INTRODUCTION

The California Health and Safety Code requires the AQMD to adopt an Air Quality Management Plan to meet state and federal ambient air quality standards and adopt rules and regulations that carry out the objectives of the AQMP. The California Health and Safety Code also requires the AQMD to implement all feasible measures to reduce air pollution.

SCAQMD Rule 1147 was adopted December 2008 and because of the number and variety of equipment affected, the rule compliance schedule was phased in over 10 years. The NOx reductions from Rule 1147 are a vital component of our attainment strategy and essential for achieving compliance with federal and state ambient air quality standards for PM2.5, PM10 and ozone. Rule 1147 was also amended in September 2011 to address compliance challenges and provide regulatory relief for affected businesses.

REGULATORY HISTORY

Rule 1147 – NOx Reductions from Miscellaneous Sources, was adopted by the AQMD Governing Board on December 5, 2008. Rule 1147 incorporates two control measures of the 2007 Air Quality Management Plan (AQMP): NOx Reductions from Non-RECLAIM Ovens, Dryers and Furnaces (CMB-01) and Facility Modernization (MCS-01).

Control measure MCS-01 proposed that equipment operators meet best available control technology (BACT) emission limits at the end of a combustion system's useful life. Control measure CMB-01 proposed emission NOx limits in the range of 20 ppm to 60 ppm (referenced to 3% oxygen) for ovens, dryers, kilns, furnaces and other miscellaneous combustion equipment. Emission reductions from the equipment addressed by Rule 1147 and control measure CMB-01 of the 2007 AQMP were proposed in prior AQMPs (e.g., control measure 97CMB-092 from the 1997 AQMP).

Rule 1147 was amended September 9, 2011 to delay implementation dates one to two years, remove a requirement for fuel or time meters and provide compliance flexibility for small and large sources. In addition, the rule includes a requirement for a technology assessment for small and low emission sources that are not typically subject to the best available control technology (BACT) requirement as new sources.

RULE REQUIREMENTS

Rule 1147 established nitrogen oxide (NOx) emission limits for a wide variety of combustion equipment and affects both new and existing (in-use) combustion equipment. Rule 1147 requires equipment with AQMD permits that are not regulated by other NOx rules to meet an emission limit of 30 to 60 parts per million (ppm) of NOx depending upon equipment type and process temperature. The compliance schedule for existing equipment is phased in over 10 years starting in 2010. Compliance dates for emission limits are based on the date of equipment manufacture and emission limits are applicable to older equipment first. Owners of existing equipment are provided at least 15 years of use before they must meet rule emission limits. The first group of equipment affected had to comply

with rule emission limits when they were 20 to 30 years old. Owners of small units and units with emissions of one pound per day or less will comply with emission limits later starting in 2017.

Rule 1147 also establishes test methods and provides alternate compliance options including a process for certification of equipment NOx emissions through an AQMD approved testing program. Certification eliminates the requirement for end-users to test their equipment. Other rule requirements include equipment maintenance and recordkeeping.

In developing rule, staff worked extensively with many stakeholders. Staff held Task Force meetings with representatives from affected businesses, manufacturers, trade organizations and other interested parties. Staff also had separate meetings with manufacturers and distributors of equipment and burner systems. In addition, staff met individually with and visited local businesses to observe operations and equipment affected by Rule 1147. Staff committed to continued discussion with industry through the Rule 1147 Task Force and meetings with individual businesses on issues affecting small business including availability of low NOx burners for unique applications and specific processes.

The majority of the comments made at the Public Workshop and Task Force meetings for the 2011 amendment supported the proposed delay of compliance dates and limits on the use of meters. However, some consultants commented that the compliance delay was not needed and the AQMD should have made a greater effort to educate businesses affected by Rule 1147. An enhanced outreach program to the regulated community was a high priority for the AQMD.

The comments on the proposed amendments received at the workshop and meetings for the 2011 amendment typically fit into two categories. One set of comments dealt with implementation of the rule and asked for clarification or simplification of rule requirements. In response, staff proposed a number of changes relating to equipment identification, maintenance, recordkeeping, and source testing requirements, which ultimately will result in cost savings compared to the original rule. In addition, the amendment added a mitigation fee option that allows business with equipment emissions greater than one pound per day to delay compliance by three years but will provide emission reductions from other sources during that three year period. Together with AQMD efforts to streamline the permit modification process, the amendment helped businesses comply with rule requirements.

The second category of comments received addressed issues beyond the scope of the 2011 amendment which was crafted to respond to the compliance challenges existing at the time. These comments included proposals for new alternative industry-specific rules, questioning availability of low NOx replacement burners, requests for exemption from the rule for small sources, requests to reevaluate rule cost and cost effectiveness and a request to require a cost effectiveness analysis for every piece of equipment subject to the rule. To address many of these issues and as previously stated, the rule amendment committed the SCAQMD to conduct a technology assessment for smaller sources with emissions of one

pound per day or less no later than 18 months prior to the first effective compliance date for these smaller sources (July 1, 2017).

AFFECTED INDUSTRIES AND EQUIPMENT

A wide variety of processes use equipment that is regulated by Rule 1147. These processes include, but are not limited to, food products preparation, printing, textile processing, product coating; and material processing. A large fraction of the equipment subject to Rule 1147 heats air that is then directed to a process chamber and transfers heat to process materials. Other processes heat materials directly such kilns, process tanks and metallurgical furnaces.

Rule 1147 affects manufacturers (NAICS 31-33), distributors and wholesalers (NAICS 42) of combustion equipment, as well as owners and operators of ovens, dryers, furnaces, and other equipment in the District (NAICS 21, 23, 31-33, 42, 44, 45, 48, 49, 51-56, 61, 62, 71, 72, 81, and 92). The units affected by the rule are used in industrial, commercial and institutional settings for a wide variety of processes. Some examples of the processes regulated by the rule include metal casting and forging, coating and curing operations, asphalt manufacturing, baking and printing.

Staff originally estimated approximately 6,600 units subject to the emission limits of Rule 1147 are located at approximately 3,000 facilities. Staff estimated that about 1,600 units at about 800 facilities affected meet the NOx emission limits of Rule1147. This leaves about 2,200 facilities that are expected to require retrofit of burners in their equipment. Staff estimated as many as 2,500 permitted units with NOx emission limits greater than one pound per day and an additional 2,500 permitted units with NOx emission limits of less than one pound per day will require modification to comply with the emission limits.

Based on an update of the active permitted equipment in the SCAQMD, an estimate of the number of equipment potentially subject to Rule 1147 and the fraction of units in different categories is presented in Figure 1-1. Staff estimates that as many as 6,400 pieces of equipment are potentially subject to Rule 1147 requirements. More than half of the units (\approx 3,400) are spray booths and prep-stations. Excluding spray booths and prep-stations, staff estimates that at least one quarter of the units in each category will meet Rule 1147 emission limits without retrofitting burners.

The second largest category of equipment is ovens and dryers with approximately 1,100 units subject to the rule. Staff estimates that at least one-third of the permitted ovens will meet Rule 1147 emission limits based on a sample of the burners used in the ovens. There are also approximately 500 additional ovens and dryers with SCAQMD permits that are not subject to Rule 1147 because they are heated electrically, with infrared lamps, or using a boiler or thermal fluid heater. Electric, infrared lamp, and boiler and thermal fluid heated ovens and dryers are not included in the Figure 1-1.

The third largest group of equipment is air pollution control units that capture and incinerate VOCs, CO, PM and toxics. There are approximately 900 afterburners, degassing units and remediation units. The remaining categories of equipment have significantly

fewer units with high temperature processes (metal melting, heat treating, burn off ovens, kilns and crematories) being the next largest group with approximately 700 units in these five categories. Although these categories have fewer equipment, many units have significantly higher emissions than spray booths and small ovens. Appendix A provides a more detailed summary of the industries and equipment categories affected by Rule 1147.

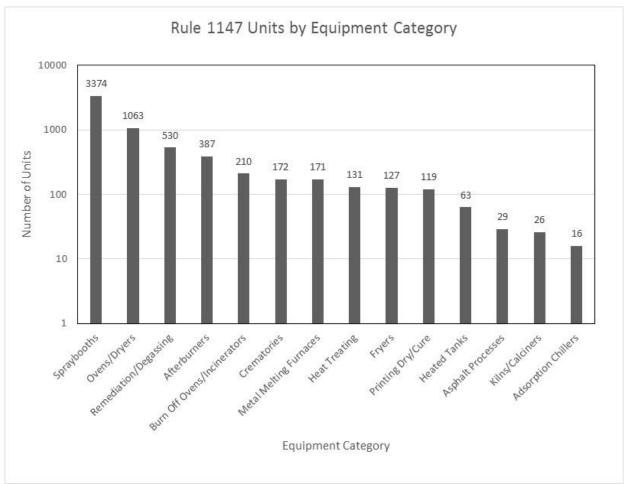


Figure 1-1

Based on permitted emissions and information provided by manufacturers, vendors and businesses, staff has calculated an emissions inventory of 3.0 to 5.2 tons of NOx per day from the equipment regulated by Rule 1147. Spray booths (\approx 3,400 units) contribute about 0.5 to 0.6 tons per day. Other types of equipment with permit limits of one pound per day or less (\approx 1,500 units) have NOx emissions totaling about 0.4 tons per day. Equipment with a potential to emit of more than one pound per day (\approx 1,500 units) contribute NOx emissions of 2.1 to 4.2 tons per day. These emission estimates are consistent with the 6.2 tons per day emission estimate developed from the 2007 AQMP for adoption of Rule 1147 in 2008.

Note that the AQMP inventory was based on fuel use and default emission factors. The 2007 AQMP inventory did not take into account lower emissions from units that met

BACT emission limits. Using the midpoint of the estimated range from the above calculation for larger sources gives a total inventory estimate for all equipment of about 4.1 tons of NOx per day. This estimate is consistent with the AQMP inventory and permit information that at least one quarter of the units have burners that can comply with BACT and Rule 1147 emission limits.

In addition, staff estimates that as many as half of the units (750 out of 1,500) with a potential to emit greater than one pound per day may have actual daily NOx emissions less than a pound per day. If this estimate is correct, then more than half of units with emissions greater than one pound per day of NOx (about 375) have already submitted test protocols and test results. Moreover, because of the Rule 1147 compliance schedule, most of the remaining half of the 750 units with actual emission greater than one pound per day have been permitted since the late 1990s and installed burners that comply with BACT and Rule 1147 NOx emission limits.

TECHNOLOGY ASSESSMENT

SOURCES OF INFORMATION

This report includes information from the technology assessments for Rule 1147 adoption in 2008, the rule amendment in 2011 and new information from the Rule 1147 emission testing program. This information is summarized by equipment category and by rule emission limit. The basis for the technology based emission limits in the rule are in Part D of the SCAQMD BACT Guidelines. In addition, testing performed to demonstrate compliance with SCAQMD permit limits indicated when an emission limit was achieved in practice and was used in the technology assessments for rule adoption and amendment. While the focus of this report is on equipment with NOx emissions of 1 pound per day or less, the report also includes information and analysis applicable to larger units. This information is provided in order to address stakeholder's concerns regarding the availability of technology for larger equipment.

The appendices to this report provide detailed information on affected industries, emission testing, cost effectiveness calculations, available technology and emission test results for these equipment categories. Appendix A provides a detailed summary of the equipment categories and businesses affected by Rule 1147. Appendix B of this report includes a summary of the sources of information used for rule adoption and the subsequent 2011 amendment. Appendix C provides a discussion of the SCAQMD emission test program, testing guidelines and a summary of the Rule 1147 emissions test completed. Appendices E through N provide details on the equipment, burners and emission test results for the different categories of equipment subject to Rule 1147.

In addition to information available from SCAQMD programs, this report includes recommendations from equipment and burner manufactures, affected businesses, consulting engineers and industry and business representatives. Staff conducted outreach to equipment manufacturers and product installers. Staff went into the field to identify equipment that will comply with Rule 1147 emission limits with available burners and those that may not. Rule development staff has worked with industry representatives and other staff to develop solutions to compliance challenges. These discussions resulted in a number of proposals to staff that are included in this report.

RESULTS OF THE RULE 1147 EMISSION TESTING PROGRAM

Emission testing is performed to demonstrate compliance with an emission limit. Testing companies do enough calibration, testing and calculation to prove that pollutant concentration or mass emissions are below the applicable limit. Most Rule 1147 emission test results are adjusted by the testing company or SCAQMD staff to address issues with a test's acceptable range or with other testing and calculation issues. While emission tests can demonstrate compliance with an emission limit, many test results cannot be used to accurately estimate concentrations or mass emissions from individual units and categories of equipment. However, the Rule 1147 testing program does demonstrate that burners and their control system comply with the rule emission limits.

Table 2-1 provides a summary of submitted Rule 1147 NOx emission test results that have completed SCAQMD staff review and demonstrated compliance with Rule 1147 emission limits. These test results indicate that equipment subject to Rule 1147 comply with the NOx emission limits. Table 2-1 shows the number of test results and average NOx emission concentrations for units tested at the highest and at a low firing rate if applicable. In most cases the highest firing rated tested is the normal operating condition. However, in a small number of cases the low firing rate is the normal condition. The table also indicates the applicable NOx emission limit for each category of equipment. Table 2-1 does not include results from tests that were subsequently repeated because the original test did not comply with the test method, test protocol or SCAQMD guidelines.

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Equipment Category	Rule 1147 NOx Limit (ppm ¹)	Number of Units Tested at Normal/High Fire	Average NOx Concentration at Normal/High Fire (ppm)	Number of Units Tested at Low Fire	Average NOx Concentration at Low Fire (ppm)
Afterburner/					
Regenerative					
Thermal Oxidizer	30 or 60 ²	13	26	4	13
Afterburner/ Thermal					
or Catalytic Oxidizer	30 or 60 ²	9	40	1	41
Afterburner/					
Remediation Unit	60	2	23	1	24
Spray Booth					
(Automobile)	30	10	24		
Spray Booth (Other)	30	13	18	2	22
Crematory	60	20	50		
Dryer/Asphalt	40	1	35		
Fryer	60	7	29		
Fuel Cell Heater	30 or 60 ²	1	11	1	9
Heated Tank	60	7	37	1	34
Metallizing Spray	30 or 60 ²	1	22		
Metal Heat Treat	60	23	48		
Metal Melting (Large)	60	8	42	1	58
Metal Melting					
Pot/Crucible	60	5	54		
Multi-chamber Burn	30/60 or				
Off Oven or Furnace	60/60 ³	11	42 ⁴		
Multi-chamber	30/60 or				
Incinerator	60/60 ³	1	54 ⁴		
Oven/Dryer	30 or 60 ²	112	20	35	21
Print Dryer/Oven	30	19	20	4	23
Textile Shrink Dryer	30	2	24		
Textile Tenter Dryer	30	4	23	4	26
Unit Heater	30 or 60 ²	3	20	1	13
Number of Units		272		55	

Rule 1147 Emission Test Results

¹ The Rule 1147 NOx limit is based on a reference level of 3% oxygen (O₂) in the exhaust. All emission test results are converted to a concentration in parts per million at the reference level of 3% O₂.

² The emission limit depends upon the process temperature.

³ The emission limit for the primary chamber varies depending upon process temperature.

⁴ Average NOx emissions measured after the secondary chamber (afterburner).

BURNER AVAILABILITY AND FEASIBILITY TO RETROFIT UNITS

While the Rule 1147 emissions testing program indicates that the rule limits are achievable for all categories of equipment with current available technology, there is one situation where low NOx burners are not available. There is also one type of process for which staff recommends changing an emission limit based on the type of burners used in that process. In addition, there are several related categories of equipment where it is not feasible to retrofit an existing unit.

Burners for Small Ovens and Dryers

Low NOx burners are not available for very small low temperature ovens or dryers. The smallest burners produced are between 0.4 and 0.5 mmBtu per hour. If an oven requires a burner to consistently operate below about 0.3 mmBtu per hour, low NOx burners are not available to meet the 30 ppm NOx emission limit. There are smaller low NOx burners for high temperature applications that must meet an emission limit of 60 ppm. However, these applications typically require multiple burners and the total heat input exceeds 0.4 mmBtu per hour. Based on these findings, staff is considering exempting units with heat inputs less than 325,000 Btu per hour from the rule emission limit.

Emission Limit for Burn off Ovens and Furnaces

The second category of equipment that may have difficulty meeting an emission limit of 30 ppm in low temperature applications is burn off ovens, furnaces and incinerators. Burn off ovens and furnaces melt and incinerate coatings and other materials on a product that is being recycled. This occurs in a chamber where the process temperature may be above or below 800 °F. For processes below 800 °F the NOx emission limit is 30 ppm. The incinerated materials go to a second chamber or incinerator that operates above 800 °F and has a NOx emission limit of 60 ppm.

However, the preferred type of burner for the primary incineration chamber is the same type of burner used in high temperature applications such as afterburners. These are also the same types of burners used in kilns, direct fired furnaces and crematories. These burners have been designed to comply with emission limits in the 50 to 60 ppm range. After discussions of this issue with equipment and burner manufacturers, staff is considering changing the emission limit for the primary chamber of burn off ovens, furnaces and incinerators to 60 ppm.

Heated Process Tanks, Evaporators and Parts Washers

The Rule 1147 testing program has identified three types of heating systems used in process tanks, evaporators and some parts washers that comply with the NOx emission limit. There is no information yet available for the fourth type of heating system. For all four of these systems, the burners and heat exchangers or tubes are designed as one integrated system. If an individual heated tank or evaporator system using any of systems does not comply with the emission limit, then the whole tank will have to be replaced. Exempting existing in-use units from complying the rule emission limit unless the combustion system is modified would address the issue that it is not feasible to retrofit an existing heated tank with different burners. If a tank is retrofitted with new burners, the owner will likely

replace the heating tubes or heat exchanger. If the owner rebuilds a process tank, then a rule compliant system can be installed at that time.

COST AND COST EFFECTIVENESS

REVIEW OF SCAQMD COST EFFECTIVENESS ANALYSIS

There is no single cost or cost effectiveness limit established by the SCAQMD Board for use in rule development, permitting or other programs. Cost effectiveness for CARB and SCAQMD rules and programs differ and depend upon the program, the pollutant, the nature of the process and equipment affected and the types of feasible emission control options. For example, in 1993 a \$15,000 per ton criteria for RECLAIM Trading Credits was adopted by the Board for the SCAQMD emission trading program to trigger additional evaluation and potential rule amendment. Adjusted to 2015 dollars using the Marshall & Swift Equipment Cost Index, that criteria would now be approximately \$25,000 per ton. However, for amendment of the SOx RECLAIM program in 2010, the SCAQMD Board approved an amendment with cost effectiveness up to \$60,000 per ton (adjusted to 2015 dollars).

For Rule 1147 adoption, staff estimated average cost effectiveness for replacement of different sizes of burners. Most of the burners evaluated for adoption of Rule 1147 were too large and not used by equipment subject to the rule. Those burners are only used by large equipment subject to the RECLAIM program. Most of the equipment subject to Rule 1147 requirements have heat inputs less than 4 million Btu per hour and burners used in Rule 1147 equipment are less than 2 million Btu per hour. The most common burner size in Rule 1147 equipment is 1 million Btu per hour. In the 2008 staff report, the average cost effectiveness for replacing the smallest burners with the lowest potential NOx emission reductions was about \$22,400 per ton (adjusted to 2015 dollars).

For new source review under SCAQMD Regulation XIII, cost effectiveness can be included in the determination of what is best available control technology (BACT) for emission control for non-major sources. For BACT decisions affecting new sources at major facilities, cost or cost effectiveness is not included in the evaluation. However, BACT determinations for non-major (minor) sources are established by two approaches. One path evaluates technology and cost effectiveness as part of a public process to establish minor source BACT. The public process includes workshops and stakeholder input. The cost effectiveness for those decisions varies depending upon the pollutant, process and equipment involved. Note that there is one important difference in the calculation of cost effectiveness between traditional BACT analysis and rule development. For rule development, a best estimate of equipment's useful life is used in the calculation of cost effectiveness instead of a fixed 10 year assumption that is associated with financing of new equipment.

Historically, the second path used to establish minor source BACT was demonstration by a permitted unit at a non-major facility that an emission limit was "achieved in practice." If an emission limit was achieved in practice at a non-major facility, that emission limit became minor source BACT and was required by SCAQMD for applications for subsequent SCAQMD permits for similar new units regardless of the cost and cost effectiveness.

The SCAQMD has also established maximum cost effectiveness criteria in the SCAQMD BACT guidelines for sources for which there is no defined minor source BACT (Appendix

D). These cost effectiveness criteria is adjusted every calendar quarter by the Marshall & Swift Equipment Cost Index to account for changes in equipment cost. The cost effectiveness criteria for processes that do not have an established BACT is currently about \$27,000 per ton of NOx for average cost effectiveness and about \$81,000 per ton of NOx for the incremental cost effectiveness between two or more control options. The incremental cost effectiveness for Rule 1147 equipment is the difference in cost and emissions between an old natural gas burner (BACT prior to 1998) and a low NOx gas burner meeting rule emission limits. These minor source BACT criteria are appropriate for the analysis of cost effectiveness for small equipment with emissions of one pound per day or less.

SCAQMD BACT COST EFFECTIVENESS CRITERIA

The cost to retrofit equipment and the NOx emission reductions for the project can be illustrated for different cost effectiveness criteria with a graph. Figure 3-1 shows an example using small emission reductions of approximately a pound per day and project cost that results in a cost effectiveness of \$27,000/ton of NOx reduced. The cost is shown for projects with equipment lifetimes of 20 and 25 years.

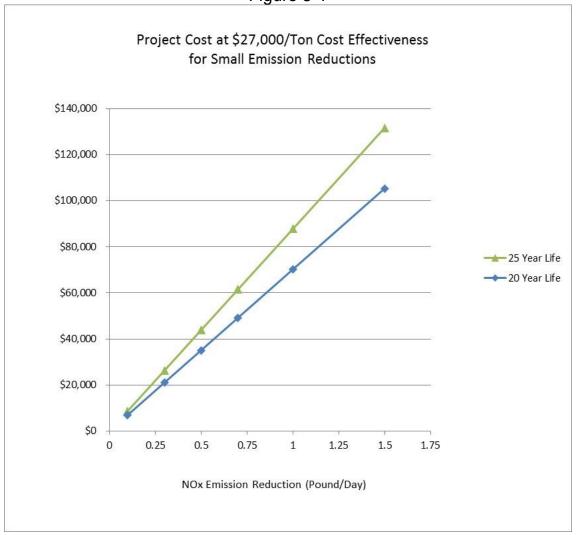


Figure 3-1

For emission reductions of 0.25, 0.5 and 1 pound per day, project costs of \$20,000, \$40,000 and \$80,000 have cost effectiveness of \$27,000 per ton. Emission reductions of 0.25 to 1 pound per day bound the range of emission reductions achievable from small and low emission equipment that are the subject of this technology assessment. This equipment has NOx emissions of one pound per day or less, are exempt from the BACT requirement under new source review and have more time to comply with Rule 1147 emission limits.

DISCOUNTED CASH FLOW ANALYSIS

For calculating cost and cost effectiveness, SCAQMD BACT guidelines (Appendix D) and rule development use a discounted cash flow (DCF) analysis to estimate the cost and cost effectiveness of emission control options. The DCF method is used to calculate a net present value (NPV) of current and future expenses and savings (cash flows) from installing emission control equipment. When determining the cost and cost effectiveness of a control option, the current costs associated with the purchase and installation of equipment are added to the net current value of future costs and savings associated with operating the new equipment. In a situation where one emission control system is replacing another, the future cost and savings incorporated into the analysis are those above and beyond the cost of maintaining and operating the current equipment.

To calculate the cost effectiveness of an emission control system, the purchase, installation and operating cost of new equipment (the NPV) is divided by the emission reduction benefit of the new equipment over the operating life of the equipment. The operating life of equipment can vary from about 10 years for a residential tank type water heater to 25 or more years for residential heating furnaces, boilers, ovens, furnaces, kilns and afterburners. There is a significant number of permitted equipment including ovens, kilns, furnaces and afterburners systems operating in the SCAQMD that are 20 to 50 years old.

LEVELIZED CASH FLOW ANALYSIS

In response to recommendations from a SCAQMD sponsored review of its socioeconomic analysis conducted by Abt Associates and stakeholder comments, all current and future rule analyses will include both the DCF and levelized cast flow (LCF) estimates of costs and cost effectiveness. The cost-effectiveness values based on DCF and LCF methods are not directly comparable to each other: DCF discounts all future operation and maintenance costs to their present values whereas LCF amortizes the initial capital and installation costs over the equipment lifetime. This is why DCF values are always lower than LCF values for the exact same amount of estimated compliance cost.

EXCLUDED COSTS

Because the useful life of boilers, ovens and furnaces can be several decades, the cost of routine maintenance and equipment replacement unrelated to control equipment is not included in the cost effectiveness analysis of regulatory requirements to meet emission standards. For example, a boiler's heat exchange tubes may be replaced several times over the boiler's life. Burners and combustion control systems in boilers and other equipment must be maintained and are routinely repaired or replaced. In addition, heat treating furnaces have refractory and door seals replaced several times over the furnace's lifetime. Indirect fired heat treating furnaces also require replacement of heating tubes and may require replacement of heat shields and recirculation fans as the furnace ages. Furnace

refractory, seals, tubes and heat shields may be replaced two to three times over a twenty year period. These routine maintenance and repair expenses are independent of the cost of upgrading equipment to meet emission standards.

Costs for demonstrating compliance with SCAQMD rules and regulations are excluded from cost effectiveness analyses for emission control equipment. SCAQMD BACT Guidelines, permit processing policy, and rule development process do not include the cost of demonstrating rule compliance such as source testing in the calculation of emission control equipment cost effectiveness. However, compliance demonstration costs including emissions testing, recordkeeping and other costs beyond what is recommended by equipment manufacturers are included in the socioeconomic assessment for rule adoptions.

Compliance demonstration costs are not included in a cost effectiveness analysis of new pollution control systems because all units regulated by a rule are subject to the same compliance costs. All units required to meet the Rule 1147 NOx emission limit must be tested and the owner/operator must keep maintenance and test records. A rule compliant unit that does not replace its heating system has the same compliance costs as a unit that does replace burners and other components. Moreover, costs due to compliance with other SCAQMD rules such as Regulation XIII (new source review), including BACT and emission offsets, should not be included in the calculation of cost effectiveness for emission control equipment installed to comply with Rule 1147 emission limits.

CALCULATION OF COST EFFECTIVNESS PER BURNER

The calculation of cost and cost effectiveness for Rule 1147 adoption and the 2011 amendment were done on a per burner basis. There are four reasons for this approach. First, combustion systems retrofit to comply with Rule 1147 emission limits use the same system components whether the unit has one or multiple burners. Burners, valves, and control systems will be the same for each burner. The system component that will differ is the combustion air blower (fan). Some units will use packaged burners with an integrated combustion air blower (fan) and others will use an external blower for one or multiple burners. Second, the cost per burner for a burner with its own integrated combustion air blower is higher than for a system with multiple burners and one blower. Third, most small or low emission units have only one burner and tend to use package burners with integrated combustion air blowers. Fourth, the emissions for the whole unit and per burner will be comparable whether one or multiple combustion air blowers are used. For these reasons, the cost effectiveness analysis in this document focuses on the cost and emission reduction per burner replaced utilizing the cost for a burner with an integrated blower.

COST AND COST EFFECTIVNESS OF REPLACING BURNER SYSTEMS

The cost of replacing burners and other combustion system components with the most commonly used low NOx burners is shown in Figures 3-2 and 3-3. Burner and combustion system replacement cost for low temperature applications that are required to comply with a 30 ppm NOx limit are displayed in Figure 3-2. Figure 3-3 shows replacement cost for high temperature applications that are required to meet a 60 ppm NOx limit. These figures include information for the most common burners from the three manufacturers that provide the majority of low NOx burners used in Rule 1147 equipment in the SCAQMD.

Burner Cost and Cost Effectiveness for Low Temperature Ovens and Dryers

Figure 3-2 summarizes information on low NOx burners and system components for low temperature operations including ovens and dryers. These costs represent a typical equipment cost to the customer and do not include tax, shipping and installation costs. The information provided is for nozzle mix burners with packaged combustion air blowers including the Eclipse Winnox and HaloFire, the Maxon Cyclomax and Ovenpak-LE and the MidCo low NOx burner.

Other types of systems can also be installed in ovens and dryers, but the cost of those alternatives are comparable to the cost of burner systems with packaged combustion air blowers. The cost for a burner with a separate combustion air blower is comparable to the cost of a packaged burner. Separate combustion air blowers are used for larger burners or where multiple burners with one blower providing combustion air to all reduces the cost of the system. Low NOx line burners are also available from Eclipse and Maxon but are more commonly used for larger systems than those that are the focus of this report. However, the cost for small line burners are comparable to the cost of the low NOx packaged burner systems shown in Figure 3-2.

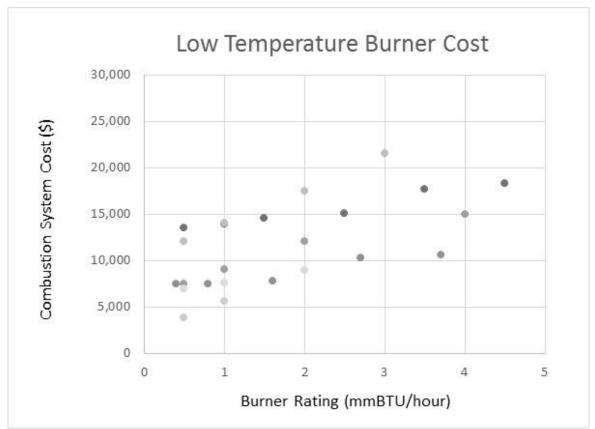


Figure 3-2

Eclipse and Maxon each have two nozzle mix low NOx burner product lines for low temperature applications. Each has one system that was developed about 15 years ago (Cyclomax and Winnox) and a recently developed burner system (HaloFire and Ovenpak-LE). Maxon also has a third low NOx burner (the M-Pakt) that uses a different technology

to lower NOx that is not included in this Figure but has been installed in a small number of units in the SCAQMD. The M-Pakt burner costs more than the burners included in Figure 3-2 but can achieve significantly lower NOx emissions (less than 10 ppm).

Because some replacements do not require the replacement of the fuel supply components and the control system while other retrofits require the replacement of all components, the Maxon Cyclomax and Eclipse Winnox cost in Figure 3-2 only include the cost of the burner with combustion air blower. The Eclipse HaloFire and the Maxon OvenPak-LE cost include the replacement of fuel and control systems. If a retrofit with a Winnox and Cyclomax burner requires replacement of other components including fuel and control systems, the total equipment replacement cost is comparable to the cost of purchasing a HaloFire or OvenPak-LE with all combustion system components. The MidCo low NOx burners are only sold with MidCo fuel and control system components and have two costs depending upon options requested. Replacement of a units fuel line and control system components depend upon the age of the original equipment and the replacement burner. If fuel line and control system components that comply with current code requirements.

The majority of the low emission equipment (1 pound/day NOx) subject to Rule 1147 have combustion systems rated less than 2 mmBtu/hour. Most use single burners rated less than 2 mmBtu/hour. The cost for installing a burner in the size range of 0.5 to 2 mmBtu/hour is a good estimate of the cost to replace combustion systems in typical low emission units. The cost of packaged burners and combustion systems of this size varies from about \$5,000 to \$15,000 with typical equipment costs ranging from \$7,500 to \$15,000.

However, to calculate total cost of replacing equipment, shipping, tax and installation costs must be added. One approach to estimate installed cost is an established EPA method that uses a multiplying factor to include sales tax and estimate shipping and installation cost. Based on the EPA method and the sales tax rate in southern California, the SCAQMD has used a factor or 1.87 times the cost of equipment to estimate installed cost. In this method, installation costs are assumed to be 50% of the equipment cost and are included in the factor. A contingency can also be included to address uncertainties in the cost estimation. For this analysis an additional 13% is added which results in an installed cost estimating factor of 2.0. Using this factor, an estimated cost for installing a low NOx burner in small ovens and dryers is approximately \$30,000 [\$15,000 X 2.0] but can be lower or higher depending upon the components replaced and other factors.

The cost effectiveness of replacing oven and dryer burners in this size range can be estimated using the NOx reductions possible from low emission units. Emission reductions of 0.25, 0.5 and 0.75 pounds per day over 260 days per year and 20 years result in a cost effectiveness of \$46,154, \$23,077, and \$15,385 per ton for a project cost of \$30,000. Since most reductions are likely in the range of 0.25 to 0.5 pounds per day, the range is best represented as \$23,000 to \$46,000 per ton of NOx reduced with the midpoint of this range at \$34,500 per ton. This cost effectiveness to replace combustion systems for low emission ovens and dryers is greater than the SCAQMD BACT \$27,000 per ton average criteria but less than the \$81,000 per ton incremental criteria for minor source BACT.

In summary, the cost of replacement burners and combustion system components can vary depending upon which components must be replaced. Depending upon the age of the original installation, the burner or the entire combustion system may be replaced. In addition, installation cost can vary depending upon the particular piece of equipment and whether the equipment owner has requested additional work that is not required for compliance with Rule 1147 emission limits. Additional cost will be incurred when upgrading capacity and performing other equipment maintenance. Disregarding other costs the equipment owner may choose to include in a retrofit project, the cost effectiveness for low emission units to comply with the Rule 1147 emission limit may exceed the SCAQMD minor source BACT average criteria for NOx.

Burner Cost and Cost Effectiveness for High Temperature Applications

Figure 3-3 displays burner and combustion system costs for high temperature applications. These costs represent a typical equipment cost to the customer and do not include tax, shipping and installation costs. The three most common burners used in high temperature applications to comply with the Rule 1147 NOx emission limit of 60 ppm are the Maxon Kinedizer, the Eclipse Thermjet and Eclipse Tube Firing Burner (TFB). The Kinedizer and Thermjet are used in direct fired heating applications including metal melting, heat treating and in afterburners. The TFB is used for indirect heating applications such as heat treating. Burners from other major manufacturers including Bloom, Facultatieve, and North American/Fives have also been available for more than 15 years and were tested for Rule 1147 compliance. However, these systems were original installed burners and were not retrofits. Staff is not aware of any units that were retrofit with burners from these manufacturers in order to comply with Rule 1147.

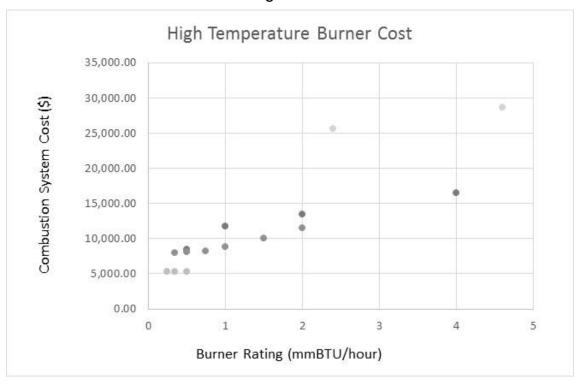


Figure 3-3

Pot and crucible furnaces use small nozzle mix burners from a number of manufacturers. Figure 3-3 includes cost for different sizes of the Eclipse Ratio Air burner which has been installed in a small crucible furnace to comply with the Rule 1147 NOx emission limit. A Kinedizer burner has also been used to retrofit a small crucible furnace to increase capacity, reduce fuel cost and lower NOx emissions.

The cost per burner for high temperature applications is similar to the cost for low temperature applications. However, in larger metal melting and heat treating furnaces, multiple small burners are typically used to provide a more even distribution of heat in the furnace. In situations with multiple burners, the furnace is designed with one combustion air blower for all burners. However, the Eclipse Thermjet, the Ratio Air and the Maxon Kinedizer are also used in many applications requiring one burner. Consequently, the cost shown for the Thermjet, Ratio Air and Kinedizer in Figure 3-3 includes the cost of an individual combustion air blower, new fuel supply components and a new control system. In situations where multiple burners are installed with one combustion air blower and a common control panel, the cost per burner will be less. The cost for each TFB burner is based upon the cost for a system with six burners, new combustion air blower, fuel supply components and control system. The cost of the TFB burner also includes a flue gas recirculation (FGR) system for each burner that lowers NOx emissions. The FGR system is currently available for burners rated up to 0.5 mmBtu per hour.

For small high temperature applications up to 2 mmBtu per hour, the cost per burner is similar to the cost for low temperature applications and is in the range of \$5,000 to \$15,000. Using the EPA based multiplier factor of 2.0 to estimate installation cost for individual NOx burners in small high temperature equipment is approximately \$10,000 to \$30,000 but can be lower or higher depending upon the components replaced, number of burners and other factors.

Similar to the case of replacing burners in low temperature applications, the cost effectiveness of retrofitting smaller high temperature units with low NOx burners for emission reductions of 0.5 pounds per day or less may exceed the SCAQMD minor source BACT NOx average cost effectiveness criteria. For example, replacing burners at a cost of \$10,000 to \$30,000 per burner for an emission reduction of 0.5 pound per day per burner over 25 years gives a cost effectiveness range of \$6,150 to \$18,500. However, emissions are highly dependent on the size of unit and operating schedule. A reduction of 0.25 pounds per day per burner for the same cost gives a cost effectiveness range of \$12,300 to \$37,000 per ton. With this smaller emission reduction, the cost effectiveness may exceed the minor source BACT average cost effectiveness criteria of \$27,000 per ton depending upon the cost of the burners and other components selected. For emission reductions less than 0.2 pound per day the cost effectiveness is likely to exceed the BACT average cost effectiveness criteria.

As with low temperature applications, the cost of replacing burners and combustion system components varies depending upon components replaced. Contingent upon the age of the original equipment, the burner or the entire combustion system may require replacement. Installation cost varies between equipment and locations. In addition, the equipment owner may request additional work that is not required for compliance with Rule 1147 emission limits which will increase the cost of the project.

Heating System Cost and Cost Effectiveness for Spray Booths

The cost difference to a customer between a new certified rule compliant heated spray booth and a new non-compliant unit is less than \$10,000 based on information from manufacturers, vendors and the cost of booths prior to rule adoption. The cost for new units includes markups from the booth manufacturer applied to the cost of the burner, gas train and control system. Most of the specialty booths used for applications other than auto body repair were tested with standard burners, so there was no additional equipment cost to comply with Rule 1147 limits. However, the cost for adding a new natural gas fired certified heating system to an existing spray booth varies from \$30,000 to \$50,000 with a typical cost of about \$40,000. The heating system cost varies depending upon the manufacturer, type of booth and the individual installation.

The cost of a complete new booth is highly variable depending upon the type of booth and options. According to vendor supplied information, the cost to purchase and install a new spray booth is about 20% higher than in 2008 when Rule 1147 was adopted. This increase is consistent with industry data on the cost to purchase and install new equipment (i.e., Marshall & Swift Equipment Cost Index which includes inflation, the cost of materials and manufacturing costs). The typical new installation is a semi down draft (side draft) booth for about \$80,000. A new basic cross draft booth without recirculation is less and the cost of a new full down draft booth is about \$115,000 and up depending upon options. Although the cost for semi down draft and down draft booths are higher than for a basic cross draft, the heating system costs are about the same for basic and premium booths from the same manufacturer or vendor.

The cost effectiveness of a new low NOx SCAQMD certified auto repair booth is at most \$22,000 per ton [(\$10,000 at most) / (70% reduction in NOx) X (0.25 lb/day / 2000 lb/ton) X 260 days/year X 20 years)]. For higher volume shops, the cost effectiveness is lower than \$22,000/ton.

The cost to retrofit a used booth to install in the SCAQMD as a new permitted unit is significantly less than purchasing a new booth. However, the cost effectiveness for retrofitting an existing permitted auto repair booth with an SCAQMD certified heating system is \$88,000 per ton of NOx reduced based on a cost of \$40,000 and a 20 year life. For a high volume booth used two shifts a day, the cost effectiveness could be less than half this value (\$44,000/ton). For a booth retrofit costing \$30,000 the cost effectiveness is \$33,000 to \$66,000 per ton depending upon the number of cars processed. This cost effectiveness of retrofitting an existing permitted booth is higher than the minor source average cost-effectiveness criteria of \$27,000 per ton and may exceed the incremental cost effectiveness of \$81,000 per ton used for equipment without a defined BACT.

Depending upon the age of a used booth, the owner may have to upgrade the booth to meet current building and safety codes. The local building and safety agency may require mechanical, electrical, fire safety and other components be upgraded or replaced. These costs are not attributable to Rule 1147 and are also not included in the cost effectiveness analysis for new, modified or relocated units that require a new SCAQMD permit.

The preceding analysis indicates the cost effectiveness for upgrading existing spray booths to comply with the Rule 1147 emission limit exceeds the minor source average cost-effectiveness criteria of \$27,000 per ton used by SCAQMD for equipment categories without a defined BACT and in some cases may exceed the incremental criteria of \$81,000 per ton. However, the cost effectiveness for new units is at most \$22,000 per ton and is less than the BACT Guidelines criteria. Because the cost effectiveness to retrofit an existing permitted booth is significantly higher than the minor source BACT criteria, staff is considering amending Rule 1147 to delay compliance for existing in-use permitted booths and heating units until they are modified, relocated or replaced. Staff is proposing that new, modified, or relocated units requiring an SCAQMD permit continue to be required to comply with the Rule 1147 NOx limit at the time of modification or installation. Currently a change of ownership in a business with an existing in-use permitted booth is exempt from the retrofit requirement unless the booth or heating unit is modified, relocated, replaced or becomes 20 years old.

EXAMPLES OF CALCULATIONS FOR SMALL SOURCES

A number of equipment replacement scenarios have been submitted to SCAQMD staff as examples of high cost effectiveness for replacing burners in some small Rule 1147 equipment. This section reevaluates some of those scenarios presented to staff. In order to accurately reflect equipment operation and regulatory requirements, the following analyses use permit application information provided by the applicant, SCAQMD permit conditions and SCAQMD BACT guidelines.

Afterburner Controlling Smoke and Odors from Smokehouse

An after burner for a smokehouse has been in operation since the 1960s. The afterburner is rated at 250,000 Btu/hour, is 50 years old and uses pipe burners. NOx emissions are more than 101 ppm (0.136 pound/million Btu). According to the equipment permit and application, the smokehouse operates 12 hours per day for three days a week and 4 hours per day two days per week. This operating schedule was confirmed by the company owner when recently questioned by an SCAQMD inspector. A permit condition requires the afterburner to operate whenever the smokehouse is in use (40 to 44 hours per week). If the current afterburner operates an average of 40 hours per week every week, NOx emissions over 25 years are 0.88 tons (0.25 mmBtu/hour X [0.136 lb/mmBtu] X [40 hour] X [52 weeks/year] X [25 years] / [2000 lb/ton]). While this operating schedule includes some holidays, it ignores second shifts and weeks when the company operates on a Saturday.

Because of the age and design of this particular afterburner, the entire unit likely needs to be replaced in order to comply with the Rule 1147 NOx emission limit. The burners in the unit are pipe burners which are pipes with holes in them. A consultant working with the company estimated that a replacement rule compliant afterburner would cost about \$30,000 (equipment and installation). Staff also contacted vendors to estimate the cost of a replacement afterburner for this application. Based on vendor information, a total project cost of \$30,000 is typical for a new afterburner of this size. A new rule compliant afterburner with emissions of less than 60 ppm (0.72 lb/mmBtu) would reduce emissions by at least 0.42 tons over 25 years. The estimated cost effectiveness for this emission reduction is \$30,000 divided by 0.42 tons or about \$71,000/ton. For this afterburner and other types of equipment with very small burners, the cost of retrofitting or replacing the unit may be higher than the minor source BACT average cost effectiveness criteria for sources without a defined BACT.

The analysis of this case presented to staff showed a much higher cost effectiveness than \$71,000/ton because it assumed the afterburner operates only one hour per day. However, this afterburner must be operated at all times the oven is operating and contains smoke. This requirement is common to all emission control equipment permitted in the SCAQMD. In fact, the operator of this particular unit was cited in the past by the SCAQMD for not operating the afterburner consistent with this permit requirement.

Small Heated Process Tank or Evaporator

Many small heated process tanks and evaporators have burners, heat exchangers, and tank dimensions that are specific to each manufacturer and product line. Replacement with different burners may require replacement of the entire tank if the heat exchange system cannot be replaced. The cost for replacing the smallest process tank and heat exchange system is at minimum \$30,000 to \$40,000. Burners purchased separately for a new tank rated less than one mmBtu/hour may cost as much as \$5,000 to \$10,000. The minimum cost for a new tank with burners is about \$40,000.

Most small heated tanks and evaporators operate with burners that cycle between high fire and off. A typical small system has burners in the size range of 350,000 Btu per hour (0.35 mmBtu/hour) to one million Btu per hour. NOx emissions based on a burner rating of 0.7 mmBtu/hour, a 20 year life and a default emission factor of 0.136 lb/mmBtu for natural gas are about 0.43 pounds per day or 1.1 tons over 20 years [(0.7 mmBtu/hour) X (50%) X (0.136 lb/mmBtu) X (9 hours/day) X (5 days/week) X (52 weeks/year) X (20 years)/(2000 lb/ton)]. This operating schedule does not take into account holidays but it also does not include any weeks with second shifts or operation on Saturdays. A rule compliant system (60 ppm NOx or 0.72 lb/mmBtu) would reduce NOx emission by about 0.52 tons over a 20 year period. The cost effectiveness for replacing the whole system would be about \$79,000 per ton (\$40,000/ 0.52 tons). The cost to retrofit or replace this type of small low emission unit may be higher than the minor source BACT average cost effectiveness criteria for sources without a defined BACT.

Burners for Generating Smoke and Heating Smokehouse Oven

A smokehouse has been in operations since the 1960s. The burner in the smokehouse is rated 35,000 Btu/hour with NOx emissions of more than 101 ppm (0.136 pound/million Btu of natural gas). Since 1990, BACT for smokehouse smoke generators is an electric heating element instead of a gas fired burner. An electric heating element costs less than \$100 including tax and shipping. Electric heating elements come in a variety of shapes and sizes. If the smokehouse burner is similar to round burners used in water heaters or ranges prior to 1983, the owner could also replace the old burner with a low NOx burner (15 ppm) used in modern water heaters for about \$100. The cost to install a circuit for the electric heating element or retrofit the gas burner would be about \$500 for a total cost of about \$600.

The burner/heating element in the smokehouse is used to heat wood chips to slowly generate smoke. It is also used to heat the smokehouse and is assumed to operate an average of two hours per day for 5 days each week. The amount of time the burner fires is determined the amount of wood chips and by the required oven temperature. The oven temperature depends upon the type of sausage produced and whether the smoked products contain sodium nitrite. Products without nitrites must be smoked at a higher temperature to kill bacteria.

For this example, the NOx emissions over 20 years are 50 pounds (0.0250 tons). The cost effectiveness for replacing the burner with a heating element or low NOx burner is at most \$24,000/ton of NOx reduced (\$600/0.0250 ton). If the burner or heating element operates for more than two hours per day, the cost effectiveness is lower. This example highlights that some small equipment can be retrofit to comply with Rule 1147 emission limits for low cost and reasonable cost effectiveness. Note that on adoption of Rule 1153.1 at the November 2014 Board meeting, existing smokehouses were removed from Rule 1147, included in Rule 1153.1 and are not required to comply with the rule's emission limits.

RECOMENDATIONS

RULE CHANGES UNDER CONSIDERATION

The emission testing program for Rule 1147 indicates that most equipment regulated by the rule can comply with the NOx emission limit (i.e., Table 2-1). The appendices of this report discuss the emissions test results for each category of equipment which demonstrate compliance with rule emission limits. However, low NOx combustion systems are not available for some types of small units. In addition, some categories of equipment are difficult to retrofit. Based on technical feasibility, staff is considering the following changes to Rule 1147:

- Exempt new and existing in-use units with total rated heat input of less than 325,000 Btu/hour from the Rule 1147 NOx emission limit. There are no burners in this size range for ovens and dryers that are designed to meet BACT and Rule 1147 emission limits. The smallest low NOx air heating burners designed to comply with the 30 ppm NOx limit are 400,000 to 500,000 Btu/hour (0.4 to 0.5 mmBtu/hour). If this size burner is set up to operate at less than 325,000 Btu/hour and used in an oven that requires the burner to frequently operate at heat inputs of less than 30% of its capacity, then the burner is not likely to comply with the 30 ppm emission limit. While there are burners in this size range for high temperature equipment including heat treating furnaces and kilns, these units typically use multiple small burners (four or more), have total heat ratings much greater than 325,000 Btu/hour and must comply with a 60 ppm emission limit. This change would affect an unknown number of small units regulated by Rule 1147.
- Delay compliance with the NOx emission limit for in-use heated process tanks, evaporators and parts washers with an integrated heated tank until such time the combustion system or tank is modified. New units would be required to meet the emission limit unless the total unit heat rating is less than or equal to 325,000 Btu/hour. Source test information on three of the four available types of heating systems for these heated process tanks can comply with the emission limits. However, if a unit does not comply with the emission limit, the entire process tank must be replaced. Staff estimates this change would affect less than 50 units subject to the Rule 1147 NOx emission limit.
- Change the NOx emission limit from 30 ppm to 60 ppm NOx for the primary chamber of multi-chamber incinerators, burn-off ovens, burn-out furnaces and incinerators that operate below 800 °F. This new limit will be the same compliance limit required for higher temperatures. The burner needed for the primary chamber of these devices is not designed to achieve 30 ppm. This change would affect a small unknown number of units.

Based on cost effectiveness considerations, staff is considering the following changes to Rule 1147:

- Delay compliance with the NOx emission limit for most existing in-use spray booths until the booth or heating system is modified, relocated or replaced. Modified, relocated and new spray booths and prep stations would be required to meet the emission limit at the time of modification or installation unless the total unit heat rating is less than or equal to 325,000 Btu/hour. However, staff is considering to evaluate existing in-use operations with multiple booths and locations separately from smaller operations with one location and single booths and prep stations. The cost effectiveness for a new unit that meets the Rule 1147 NOx emission limit is at most \$22,000 per ton. The cost effectiveness for retrofitting an existing unit can be as high as \$88,000 per ton. This change will affect more than half of the units now subject to Rule 1147 emission limits. This will result in delays in emission reductions of 0.3 to 0.4 tons/day starting July 1, 2017. These emission reductions forgone will be reduced as new units replace old units.
- Delay compliance with the NOx emission limit for other existing in-use units with actual NOx emissions of one pound per day or less until the unit or combustion system is modified, relocated or replaced. In addition, if the unit's emissions exceed one pound per day of NOx at a later date, then the unit must comply with the NOx emission limit. Staff is considering to further evaluate operations with multiple small units whose emissions are significant. Unit emissions can be documented using gas or time meters and daily recordkeeping. The cost effectiveness for retrofitting low emission units varies considerably and can be significantly higher than the SCAQMD BACT Guidelines average cost effectiveness criteria for equipment for which BACT has not been defined. This change will affect at least one quarter of the in-use units subject to the Rule 1147 emission limit. This will result in delays of emission reductions will decrease as new units replace old units.

These five changes to the rule would address infeasibility of retrofitting specific types of units and reduce cost by delaying compliance with the NOx concentration limit for units with low emissions. These changes would affect at least 4,900 permitted units of which two thirds are spray booths. In addition, up to half of the remaining 1,500 units subject to Rule 1147 may also have NOx emissions less than one pound per day which would result in compliance delays for 5,650 out of 6,400 units. These changes will result in a delay in emission reductions of 0.6 to 0.9 tons per day. However, these forgone emission reductions will be made up over 15 to 25 years as old units are replaced with new compliant units.

REFERENCES

REFERENCES

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SCAQMD, 2000. Best Available Control Technology Guidelines Part D: BACT Guidelines for Non-Major Polluting Facilities, South Coast Air Quality Management District (October 2000, Revised October 3, 2008) APPENDICES

Appendix A – Summary of Rule 1147 Equipment Categories

SUMMARY OF RULE 1147 EQUIPMENT CATEGORIES

Units regulated by Rule 1147 are used in commercial, industrial, government and institutional settings and by a variety of businesses. Rule 1147 affects manufacturers (NAICS 31-33), distributors and wholesalers (NAICS 42) of combustion equipment, as well as owners and operators of ovens, dryers, furnaces, and other equipment in the SCAQMD (NAICS 21, 23, 44, 45, 48, 49, 51-56, 61, 62, 71, 72, 81, and 92).

A wide variety of processes use equipment that is regulated by Rule 1147. These processes include, but are not limited to, coating; printing, textile processing, material processing, and manufacturing using wood, plastics, ceramic and metal materials. A large fraction of the equipment subject to Rule 1147 heat air that is then directed to an oven or dryer in order to dry or cure materials or coatings (convective heating). In addition, most paint booths and semi-enclosed prep-stations that are used to control overspray of coatings during application also have a heat source to accelerate curing and drying of coatings. Other types of equipment heat products directly using a combination of radiant and convective heating (e.g., radiant ovens, kilns, process tanks and furnaces). Some ovens, dryers, furnaces and kilns do not use burners to provide heat and consequently are not regulated by Rule 1147. They use electric heaters, electric infrared lamps, or heat provided by a boiler or thermal fluid heater. Boilers and thermal fluid heaters are regulated by SCAQMD Rules 1146, 1146.1 and 1146.2.

In 2008 SCAQMD staff originally estimated about 6,600 pieces of equipment located at approximately 3,000 facilities would be subject to the emission limits of Rule 1147. Staff also estimated that at least 1,600 units at about 800 facilities already met the NOx emission limits of Rule1147. The remaining 2,200 facilities were expected to require retrofit of at least one unit. Staff estimated up to 2,500 permitted units with NOx emission limits greater than one pound per day and an additional 2,500 permitted units with NOx emission limits of less than one pound per day might require modifications in order to comply with the emission limits.

Based on an update of the active permitted equipment in the SCAQMD, an estimate of the number of equipment potentially subject to Rule 1147 and the fraction of units in different categories is presented in Figures A-1, A-2 and A-3 below. Staff estimates that as many as 6,400 pieces of equipment are potentially subject to Rule 1147 requirements. More than half of the units (\approx 3,400) are spray booths and prep-stations. Excluding spray booths and prep-stations, staff estimates that at least one quarter of the units in each category will meet Rule 1147 emission limits without retrofitting burners.

The second largest category is ovens and dryers with approximately 1,100 units subject to the rule. Staff estimates that at least one-third of the permitted ovens will meet Rule 1147 emission limits based on a sample of the burners used in the ovens. There are also approximately 500 additional ovens and dryers with SCAQMD permits that are not subject to Rule 1147 because they are heated electrically, with infrared lamps, or using a boiler or

thermal fluid heater. Electric, infrared lamp, and boiler and thermal fluid heated ovens and dryers are not included in the Figures A-1, A-2 and A-3.

The third largest group of equipment is air pollution control units that capture and incinerate VOCs, CO, PM and toxics. There are approximately 900 afterburners, degassing units and remediation units. The remaining categories of equipment have significantly fewer units with metallurgical processes (metal melting and heat treating) being the next largest group with approximately 300 units between the two categories. Although these categories have fewer equipment, many include equipment with significantly higher emissions.

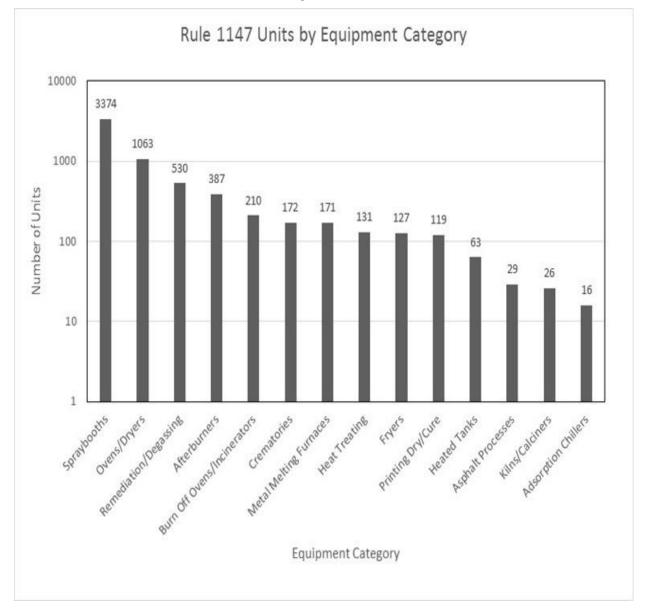


Figure A-1

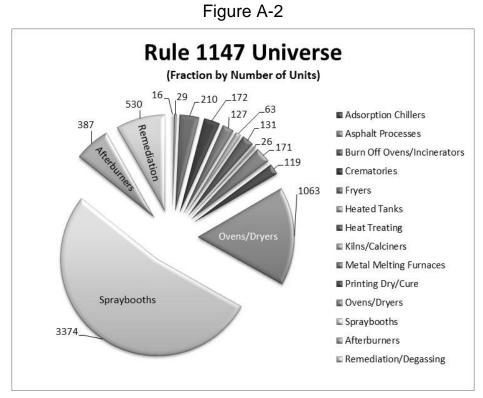
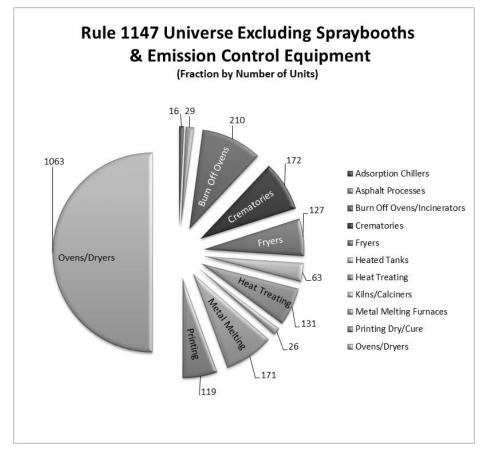


Figure A-3



The focus of this technology assessment is on smaller low emission equipment with emissions of one pound per day or less. An emission level of one pound per day is used to determine a unit's Rule 1147 compliance schedule. Units with emissions of one pound per day or less are provided up to 20 years from date of manufacture before they are required to demonstrate compliance with the NOx emission limit. Units with emissions greater than one pound per day must demonstrate compliance by the time a unit is 15 years old. New or relocated units must demonstrate compliance when they are installed. A potential to emit (PTE) of greater than one pound per day for new or relocated units also triggers the requirement to install best available control technology (BACT) under new source review (NSR) pursuant to SCAQMD Regulation XIII.

Staff has estimated the number of Rule 1147 units with NOx emissions greater than one pound per day based on a unit's PTE in the SCAQMD permit database. For spray booths and prep stations (semi-enclosed spray booths), approximately 5% (about 170) have NOx emissions greater than one pound per day. These higher emitting booths are either larger than the booths used for refinishing automobiles and light trucks or they are used in a production line at a manufacturing facility. For the remaining categories of equipment, approximately 50% have a PTE greater than one pound per day. This means approximately 1,700 units subject to Rule 1147 potentially have NOx emissions greater than one pound per day. The remaining 4,700 units have a PTE of one pound per day or less.

In previous analyses presented in rule staff reports and to the Rule 1147 Task Force, staff estimated that with the exception of spray booths at least 25% of the units in each category will comply with Rule 1147 limits without retrofitting burners. However, recent results from emissions testing of Rule 1147 units suggest that the compliance rate for units with their original burners and NOx emissions greater than one pound per day could be 50% or greater for some categories of equipment. In addition, some units with a PTE less than one pound per day have low emissions because the owner originally installed BACT compliant burners and reduced their PTE below one pound per day. New or modified sources are not required to purchase emission offsets if the average emission increase is a pound per day or less.

As an alternative to estimating emissions based on the inventory developed for the SCAQMD AQMP, total NOx emissions from equipment subject to Rule 1147 can be estimated using these units' PTE and other information. Business owners and equipment vendors indicate typical automotive booths and many other booth operations have annual average emissions of less than one third pound per day. However, up to 200 booths used in manufacturing and other applications may have emissions of a pound per day or more. Based on this information, the 3,400 permitted booths and spray stations have emissions of 0.5 to 0.6 tons NOx per day. The 1,500 other types of combustion equipment with PTE of less than or equal to a pound per day have average emissions of 0.5 pound per day per unit for a total of about 0.4 tons NOx per day. Based on this approach, the 4,700 Rule 1147 units with a PTE equal to or less than one pound per day emit about one ton of NOx per day.

The average PTE for the remaining 1,500 units is 5.6 pounds NOx per day using each units 30 day average PTE. The 30 day average PTE is calculated for a month using the weekly operating schedule but the monthly emissions are divided by 30 days instead of the number of days the equipment operates each month. Assuming these 1500 units emit at least half of their 30 day average PTE, the range for the emission estimate from the 1,500 greater than one pound per day units is from 2.1 to 4.2 tons of NOx per day. Using the range for the emission estimates calculated above provides an estimated total Rule inventory of 3.0 to 5.2 tons of NOx per day from the equipment regulated by Rule 1147. This emissions estimate is consistent with the 6.2 tons per day emission estimate developed from the 2007 AQMP for adoption of Rule 1147 in 2008.

It should be noted that the AQMP inventory was based on fuel use and default emission factors. The 2007 AQMP inventory did not take into account lower emissions from units with burners that can achieve BACT emission limits. Using the midpoint of the estimated range for larger sources gives a total inventory estimate of 4.1 tons of NOx per day for Rule 1147 equipment. This emission estimate is consistent with the AQMP inventory and permit information that at least one quarter of the units have burners that can comply with BACT and Rule 1147 emission limits.

In addition, staff estimates that as many as half of the units (750 out of 1,500) with a potential to emit greater than one pound per day may have actual daily NOx emissions less than a pound per day. If this estimate is correct, then half of the units with actual NOx emissions greater than one pound per day of NOx have already been tested (about 375) and comply with Rule 1147 emission limits. Moreover, because of the Rule 1147 compliance schedule, most of the remaining half of the 750 units are likely to have been permitted since 2000 and would have installed burners that will comply with BACT and Rule 1147 emission limits.

Appendix B – SCAQMD BACT and Test Results for Emission Limits Achieved in Practice and Used for Rule Development

SCAQMD BACT AND TEST RESULTS FOR EMISSION LIMITS ACHIEVED IN PRACTICE AND USED FOR RULE DEVELOPMENT

Rule 1147 was adopted on December 5, 2008 and amended September 9, 2011. Rule 1147 is based on two control measures from the 2007 Air Quality Management Plan (AQMP): NOx reductions from Non-RECLAIM Ovens, Dryers and Furnaces (CMB-01) and Facility Modernization (MSC-01). NOx emission from ovens, furnaces, kilns and afterburners had been proposed as control measure CMB-02 in the 1994 and 1997 AQMPs. Facility Modernization was a new AQMP measure that proposed equipment be upgraded to the best available control technology (BACT) available at the time the 2007 AQMP was adopted. The Facility Modernization measure is also proposed to be continued in the upcoming revision to the AQMP.

This appendix provides a summary of the NOx BACT determinations and SCAQMD permit limits achieved in practice by different types of units prior to rule adoption in 2008 and the 2011 rule amendment. The following figures were presented in rule development Task Force meetings and Rule 1147 Staff Reports for the 2008 adoption and the 2011 amendment. Figures B-1 to B-4 identify BACT determinations that were published by the SCAQMD and other air agencies prior to rule adoption. Figures B-5 and B-6 identify NOx emission limits that were achieved in practice through test results for equipment permitted prior to rule adoption. Figures B-7 and B-8 identify additional emission test results indicating NOx emission limits that were achieved in practice by permitted equipment tested in the SCAQMD prior to the 2011 rule amendment.

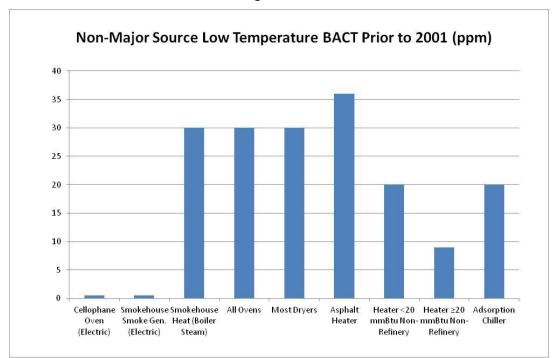


Figure B-1

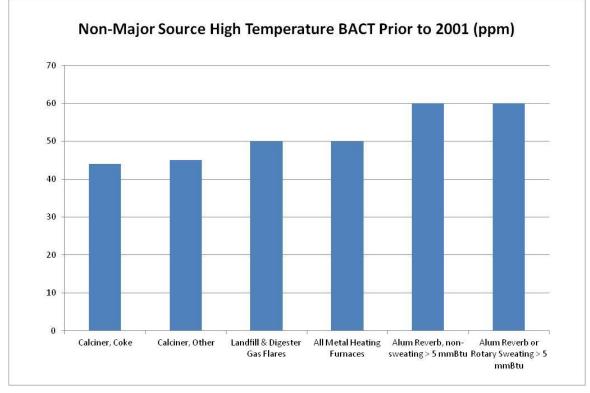
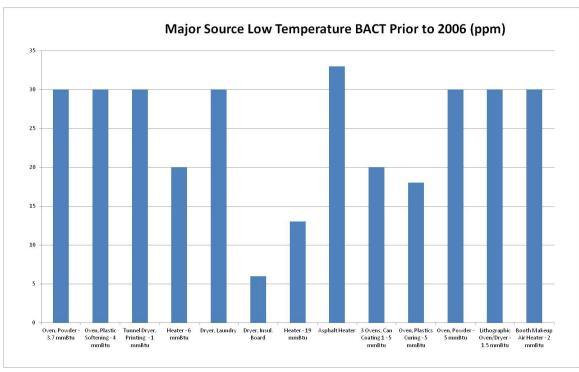


Figure B-2

Figure B-3



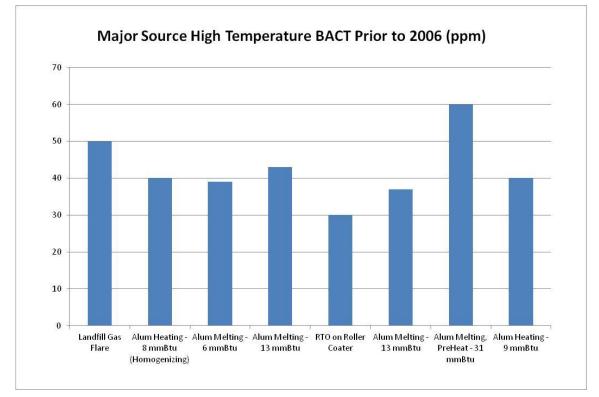
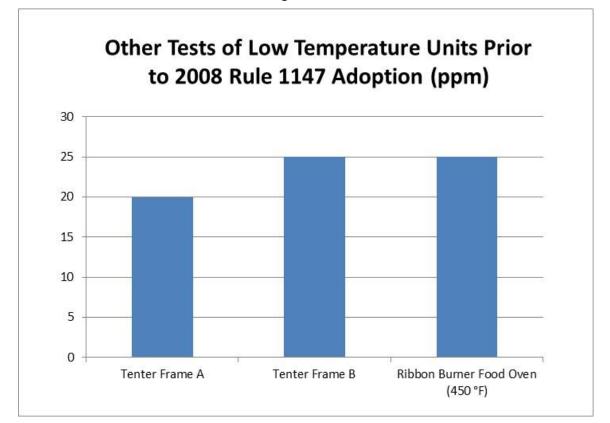


Figure B-4

Figure B-5





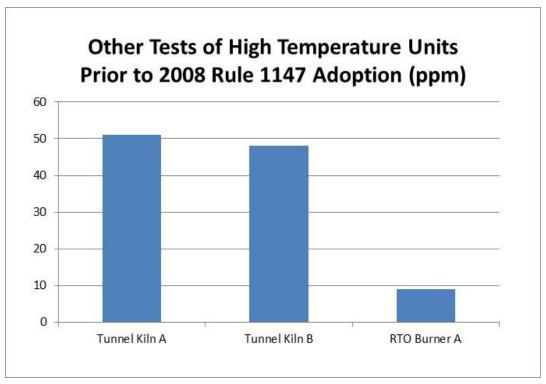
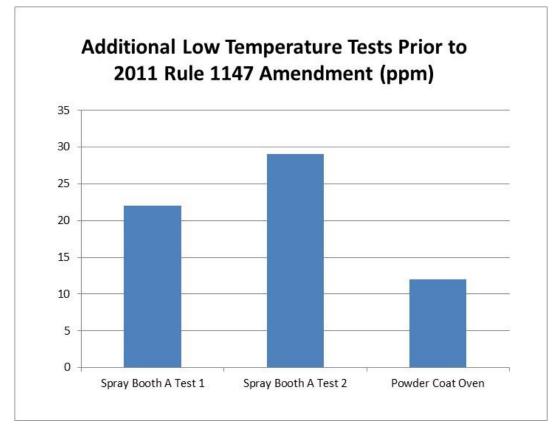


Figure B-7



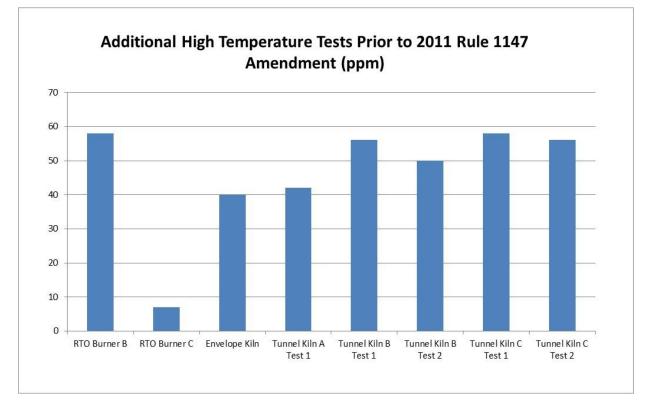


Figure B-8

Appendix C – Rule 1147 Emission Testing and Test Limitations

RULE 1147 EMISSION TESTING AND TEST LIMITATIONS

Demonstrating compliance with emission or other limits is required for Rule 1147 and all federal, state and SCAQMD air pollution regulations. In order for a new or amended SCAQMD rule to be approved for inclusion in the State Implementation Plan (SIP), test methods must be identified in the rule and approved by CARB and EPA. Rule 1147 identifies test methods that may be used to determine NOx, CO, O₂ and CO₂ concentrations and mass emissions.

In addition to EPA approved test methods, the SCAQMD also provides guidelines and generic test protocols to assist equipment owners and testing companies to prepare for and perform approvable emission tests. Because of the large variety of equipment regulated by Rule 1147, the equipment owner and the testing company must submit a test protocol and receive SCAQMD approval before testing a unit.

Emission testing can be more difficult for open direct fired units and dryers that heat large quantities of air because pollutant concentrations are diluted. Examples of these types of equipment include conveyor type ovens, textile dryers and drying ovens. Testing these units may require using a calibrated fuel meter in order to demonstrate compliance with the rule's fuel-based mass emission limit (pounds per million BTU of fuel) and additional sampling and analysis to determine carbon dioxide (CO_2) concentrations in the exhaust. CO_2 concentrations are used as an alternative to O_2 concentrations in order to adjust NOx concentrations to the Rule 1147 reference level of 3% O_2 when exhaust oxygen (O_2) concentrations are high (close to ambient levels),

The test results used for this report have been reviewed by SCAQMD Engineering, Compliance and Source Testing staff. When Rule 1147 emission testing protocols and test reports are reviewed by SCAQMD staff, they are rated as acceptable, conditionally acceptable, or unacceptable. Test reports are classified unacceptable when the report does not include all required documentation, the test was not performed consistent with the test method and approved protocol, or the test results cannot be used to demonstrate compliance with the applicable emission limit.

Tests reports are classified conditionally acceptable when the test results indicate compliance with the applicable emission limit but results are adjusted by SCAQMD staff, emissions cannot be estimated accurately but mass emissions or concentrations are equal to or less than the applicable emission limit or carbon monoxide (CO) emissions cannot be accurately determined. Rule 1147 does not include a CO emission limit because the SCAQMD is in compliance with federal and California ambient air quality standards. However, CO concentrations are routinely measured to ensure compliance with permit or facility requirements if applicable.

The most common reason for an emission test report to be rated conditionally acceptable is the reported emissions of NOx or CO have been adjusted by staff so results are consistent with SCAQMD testing and reporting guidelines. Mass emissions or concentrations may be adjusted higher or lower but the adjusted results demonstrate compliance with the rule limit.

For many test results, emissions are expressed as less than a specific concentration or mass emission rate that demonstrates compliance with the applicable emission limit. In order to be considered accurate, SCAQMD guidelines require that test results fall between 20% and 95% of the concentration of the highest concentration (high span) calibration gas used for that pollutant for that test. When results are not within the test's acceptable range, they are adjusted up to 20% of the acceptable range if they are lower, additional calibration gasses are tested to expand the range or define a lower sub-range, or the test is repeated using a different set of calibration gasses.

Adjustment up to the low end of the acceptable range (20% of the high span calibration gas) is a common result for equipment with dilute pollutant concentrations and high O_2 concentration in the unit's exhaust. Although these test results can be used to demonstrate that pollutant levels are less than a specific concentration (i.e., the low end of the acceptable range), they cannot be used to accurately estimate concentration or mass emissions. When the estimated concentrations are lower than the acceptable range of the individual test but an adjustment up to 20% of the acceptable range is still less than or equal to the applicable emission limit, the test result is satisfactory for the needs of the client and no further calibration or testing is performed by the testing company.

Test results for CO are often adjusted up to 20% of the acceptable range and because most permits do not limit CO emissions, no further analysis for CO is performed. However, when CO concentrations are adjusted up to 20% of the acceptable range, the adjusted estimated CO concentration can be up to three orders of magnitude higher than the actual concentration.

In summary, testing is performed to demonstrate compliance with an emission limit and businesses and testing companies do enough calibration, testing and calculation to prove that pollutant concentration or mass emissions are below the applicable limit. Most Rule 1147 emission test results are adjusted by the testing company or SCAQMD staff to address issues with a test's acceptable range or with other testing and calculation issues. As a result, most test results can demonstrate compliance but cannot be used to accurately estimate concentrations or mass emissions from individual units and categories of equipment.

Table C-1 provides a summary of submitted Rule 1147 NOx emission test results that have completed SCAQMD staff review and demonstrated compliance with Rule 1147 emission limits as of March 2015. Table C-1 shows the number of test results and average NOx emission concentrations for units tested at the highest and at a low firing rate if applicable. In most cases the highest firing rated tested is the normal operating condition. However, in a small number of cases the low firing rate is the normal condition. The table also indicates the applicable NOx emission limit for each category of equipment. Table C-1 does not include results from tests that were subsequently repeated because the original test did not comply with test method or SCAQMD guidelines. In addition, the table does not

include test results for units that were shut down or that were withdrawn by the unit operator.

Table C-1

Rule 1147 Emission Test Results

Equipment Category	Rule 1147 NOx Limit (ppm ¹)	Number of Units Tested at Normal/High Fire	Average NOx Concentration at Normal/High Fire (ppm)	Number of Units Tested at Low Fire	Average NOx Concentration at Low Fire (ppm)
Afterburner/					
Regenerative					
Thermal Oxidizer	30 or 60 ²	13	26	4	13
Afterburner/ Thermal					
or Catalytic Oxidizer	30 or 60 ²	9	40	1	41
Afterburner/					
Remediation Unit	60	2	23	1	24
Spray Booth					
(Automobile)	30	10	24		
Spray Booth (Other)	30	13	18	2	22
Crematory	60	20	50		
Dryer/Asphalt	40	1	35		
Fryer	60	7	29		
Fuel Cell Heater	30 or 60 ²	1	11	1	9
Heated Tank	60	7	37	1	34
Metallizing Spray	30 or 60 ²	1	22		
Metal Heat Treat	60	23	48		
Metal Melting (Large)	60	8	42	1	58
Metal Melting					
Pot/Crucible	60	5	54		
Multi-chamber Burn	30/60 or				
Off Oven or Furnace	60/60 ³	11	42 ⁴		
Multi-chamber	30/60 or				
Incinerator	60/60 ³	1	54 ⁴		
Oven/Dryer	30 or 60 ²	112	20	35	21
Print Dryer/Oven	30	19	20	4	23
Textile Shrink Dryer	30	2	24		
Textile Tenter Dryer	30	4	23	4	26
Unit Heater	30 or 60 ²	3	20	1	13
Number of Units		272		55	

¹ The Rule 1147 NOx limit is based on a reference level of 3% oxygen (O₂) in the exhaust. All emission test results are converted to a concentration in parts per million at the reference level of 3% O₂.

² The emission limit depends upon the process temperature.

³ The emission limit for the primary chamber varies depending upon process temperature.

⁴ Average NOx emissions measured after the secondary chamber (afterburner).

Appendix D – Calculation of Cost Effectiveness

CALCULATION OF COST EFFECTIVENESS

Cost effectiveness calculations for this document are performed using the methodology in SCAQMD's BACT guidelines and cost effectiveness analyses for rule development. Note that there is one key difference in the calculation of cost effectiveness between the BACT Guidelines and rule development. For rule development, a best estimate of equipment's useful life is used in the calculation of cost effectiveness instead of a fixed 10 year assumption that is associated with financing of new equipment. In addition, in rule development various emission control options are evaluated to determine the option that provides the most reductions and reasonable cost effectiveness.

For new source review (NSR) under SCAQMD Regulation XIII, equipment for which BACT is defined must meet the emission limits defined by BACT regardless of the cost. This applies to equipment at both major and non-major sources (facilities). However, for permit applications for new equipment without established BACT at non-major sources, SCAQMD staff is required to evaluate the cost effectiveness of emission reduction options. New, modified or relocated equipment with a potential to emit of one pound per day or less are not required to comply with BACT by the SCAQMD.

The cost effectiveness analysis determines which emission reduction options are below the SCAQMD Board approved maximum cost effectiveness limits established by the SCAQMD BACT committee for equipment without minor source BACT. In addition, the SCAQMD BACT guidelines and rule development are required to calculate incremental cost effectiveness for the difference in cost and emission reductions between two or more emission control options. The cost effectiveness criteria for processes that do not have an established BACT is currently about \$27,000 per ton of NOx for average cost effectiveness and about \$81,000 per ton of NOx for the incremental cost effectiveness between two or more control options. A copy of the section of the SCAQMD BACT Guidelines that discusses calculation of cost effectiveness is included in Attachment 1 of this appendix.

Attachment 1 of Appendix D – Cost Effectiveness Methodology from Part C: Policy and Procedures for Non-Major Polluting Facilities of July 2006 SCAQMD Best Available Control Technology Guidelines

Attachment 1

Cost Effectiveness Methodology

Cost effectiveness is measured in terms of control costs (dollars) per air emissions reduced (tons). If the cost per ton of emissions reduced is less than the maximum required cost effectiveness, then the control method is considered to be cost effective. This section also discusses the updated maximum cost effectiveness values, and those costs, which can be included in the cost effectiveness evaluation.

There are two types of cost effectiveness: average and incremental. Average cost effectiveness considers the difference in cost and emissions between a proposed MSBACT and an uncontrolled case. On the other hand, incremental cost effectiveness looks at the difference in cost and emissions between the proposed MSBACT and alternative control options.

Applicants may also conduct a cost effectiveness evaluation to support their case for the special permit considerations discussed in Chapter 2.

Discounted Cash Flow Method

The discounted cash flow method (DCF) is used in the MSBACT Guidelines. This is also the method used in the 1999 Air Quality Management Plan. The DCF method calculates the present value of the control costs over the life of the equipment by adding the capital cost to the present value of all annual costs and other periodic costs over the life of the equipment. A real interest rate* of four percent, and a 10-year equipment life is used. The cost effectiveness is determined by dividing the total present value of the control costs by the total emission reductions in tons over the same 10-year equipment life.

Maximum Cost Effectiveness Values

The MSBACT maximum cost effectiveness values, shown in Table 4, are based on a DCF analysis with a 4% real interest rate.

Pollutant	Average (Maximum \$ per Ton)	Incremental (Maximum \$ per Ton)
ROG	20,200	60,600
NOx	19,100	57,200
SOx	10,100	30,300
PM 10	4,500	13,400
CO	400	1,150

Table 4: Maximum Cost Effectiveness Criteria (Second Quarter 2003)

The cost criteria [in Table 4] are based on those adopted by the AQMD Governing Board in the 1995 BACT Guidelines, adjusted to second quarter 2003 dollars using the Marshall and Swift Equipment Cost Index. Cost effectiveness analyses should use these figures adjusted to the latest Marshall and Swift Equipment Cost Index, which is published monthly in <u>Chemical Engineering</u>.

^{*} The real interest rate is the difference between market interest rates and inflation, which typically remains constant at four percent.

Top Down Cost Methodology

The AQMD uses the top down approach for evaluating cost effectiveness. This means that the best control method, with the highest emission reduction, is first analyzed. If it is not cost effective, then the second-best control method is evaluated for cost effectiveness. The process continues until a control method is found to be cost-effective.

AQMD staff will calculate both incremental and average cost effectiveness. The new MSBACT must be cost effective based on both analyses.

Costs to Include in a Cost Effectiveness Analysis

Cost effectiveness evaluations consider both capital and operating costs. Capital cost includes not only the price of the equipment, but the cost for shipping, engineering and installation. Operating or annual costs include expenditures associated with utilities, labor and replacement costs. Finally, costs are reduced if any of the materials or energy created by the process result in cost savings. These cost items are shown in Table 5. Methodologies for determining these values are given in documents prepared by USEPA through their Office of Air Quality Planning and Standards (<u>OAQPS Control Cost Manual</u>, 4th Edition, USEPA 450/3-90-006 and Supplements).

The cost of land will not be considered because 1) add-on control equipment usually takes up very little space, 2) add-on control equipment does not usually require the purchase of additional land, and 3) land is non-depreciable and has value at the end of the project. In addition, the cost of controlling secondary emissions and cross-media pollutants caused by the primary MSBACT requirement should be included in any required cost effectiveness evaluation of the primary MSBACT requirement.

Table 5: Cost Factors

Total Capital Investment

Purchased Equipment Cost Control Device Ancillary (including duct work) Instrumentation Taxes Freight Direct Installation Cost Foundations and Supports Handling and Erection Electrical Piping Insulation Painting Indirect Installation Costs Engineering Construction and Field Expenses Start-Up Performance Tests Contingencies

Total Annual Cost

Direct Costs

Raw Materials Utilities

- Electricity
- Fuel
- Steam
- Water
- Compressed Air

Waste Treatment/Disposal Labor

- Operating
- Supervisory
- Maintenance

Maintenance Materials

Replacement Parts

- Indirect Costs Overhead
 - Property Taxes
 - Insurance
 - Administrative Charges
- Recovery Credits
 - Materials
 - Energy

Appendix E – Afterburner Technologies

AFTERBURNER TECHNOLOGIES

The afterburner category is comprised of a variety of technologies that are used to capture and incinerate VOCs, PM and toxic air contaminants. These include direct flame afterburners (often called an oxidizer or incinerator), regenerative thermal oxidizers (RTO) that heat a ceramic bed which oxidizes pollutants, and catalytic oxidizers which incinerate pollutants with the help of a catalytic matrix. Remediation systems for removing contaminants from soil or groundwater also use the same types of technologies to incinerate VOCs or toxic air contaminants.

Alternative non-combustion technologies for control of VOC, PM and toxic air pollutants are also available and include electrostatic precipitation, wet or dry scrubbers, carbon adsorption, and other filter media. Remediation systems and some other types of units may combine carbon adsorption or other technologies with a direct flame, catalytic or regenerative thermal oxidizer. An afterburner or oxidizer can also be as simple as a stack with a burner and pilot flame (i.e., a flare).

At the time of rule development, two sources of information were available to identify BACT for this category of equipment. BACT determinations had been made for flare based oxidizers. These determinations established a BACT/LAER limit for non-major and major sources of 50 ppm NOx. However, there were a significant number of flare based oxidizers that had been permitted with a 60 ppm NOx limit prior to that BACT determination. In addition, emission test results that varied across a range from below 30 ppm up to about 50 ppm NOx for new catalytic and regenerative thermal oxidizer systems were being used by the SCAQMD permitting group as the basis to require new applicants to meet equivalent emission limits. Given the variety of processes used as afterburners, their different emission characteristics and older equipment permitted at emission levels close to but above some current BACT levels, a rule NOx limit of 60 ppm was proposed for this category of equipment and adopted in Rule 1147.

Depending upon the type of afterburner system, different burners are used. Most of the RTOs tested use a high temperature Maxon Kinedizer burner but one uses an air heating burner from Eclipse – the Winnox burner. A Kinedizer burner is also used in a remediation unit that incorporates an RTO. Thermal and catalytic oxidizers use a variety of burners from Maxon, MidCo, Eclipse, and others. Some of these units use air heating burners and others use higher temperature burners such as the Eclipse Thermjet. A variety of burners are also used in remediation units that incorporate a thermal or catalytic oxidizer.

Newer flare based systems incorporate low NOx burners that can meet the 60 ppm NOx limit (e.g., John Zink and Flare Industries/Bekaert). However, RTO based systems offer a significant advantage over direct flame systems because they can significantly reduce fuel consumption and the cost of operating the system. Staff is aware of one facility that replaced an old flare based oxidizer with a new RTO in order to meet the Rule 1147 emission limit and to reduce fuel cost.

The afterburners that have been tested are used to control emissions from a wide variety of processes. Afterburners are widely used to control emissions of VOCs and PM from printing, coating and chemical manufacturing operations. Afterburners are also used for the control of VOCs from food bakery ovens and fryers. Larger coffee roasters are required to use afterburners to control emissions of PM, toxics and for odor control. One tested unit controls emission of PM from an animal feed dryer. Several of the tested units are portable and are used to control emissions of VOCs from degassing of storage tanks, pipelines and other equipment.

The 24 units tested easily passed the 60 ppm NOx limit. Most of the units were tested with their original burners. The RTO and remediation units have average NOx emissions of about 25 ppm at high fire with a range of 16 to 55 ppm. One unit with emissions of 55 ppm NOx has a Maxon Kinemax burner instead of a Kinedizer. Thermal and catalytic oxidizers averaged about 40 ppm NOx with a range of 21 to 54 ppm at high fire. Units with air heating burners including the Eclipse Winnox have lower emissions than units with high temperature burners such as the Eclipse Thermjet.

A large number of afterburner units using different combustion technologies have been tested and comply with the Rule 1147 NOx emission limit of 60 ppm. Most of the units complied with the emission limit using their original burners. The emission vary depending upon the combustion technology. However, all of the units for which tests were submitted and reviewed comply with the rule emission limit.

Appendix F – Spray Booths

SPRAY BOOTHS

A variety of coating operations use heated spray booths and prep stations. Prep stations are paint booths that are not fully enclosed. The majority of heated spray booths in the SCAQMD are auto body refinishing booths used for refinishing passenger cars and light trucks. Larger booths are used for industrial coating operations, large trucks and trailers and a variety of maintenance applications. In addition, auto body type spray booths are also used by manufacturing operations for drying and curing components and assembled products. An achieved in practice LAER/BACT limit of 30 ppm NOx for makeup air heaters in spray booth applications and the fact that many SCAQMD permitted booths are used as curing or drying ovens in manufacturing operations justified a Rule 1147 NOx limit of 30 ppm. It should be noted that BACT for ovens and most dryers has been 30 ppm NOx since 1998.

To date, only new or relocated spray booths have been subject to the Rule 1147 emission limit. Because more than 90% of in-use heated booths are estimated to have annual average emissions less than one pound per day of NOx, existing units are not subject to the emission limit until on or July 1, 2017. Most of the new booths have been installed in the SCAQMD are for auto body repair and have been permitted based on certification of the burner and related components of the makeup air unit for the booth.

Auto body repair businesses use paint booths for reducing the amount of spray leaving the facility and keeping dust off newly painted surfaces. In addition, booths speed up the drying process by moving air through the booth. Spray booths can also be fitted with heating units that further accelerate the drying and curing of coatings.

Auto body repair businesses use heated booths in order to increase the number of painted cars that can be dried in a day. Businesses that coat four or more cars a day use heated booths. About three painted cars can be dried each day with an unheated booth. According to spray booth vendors, the average number of cars dried per day in a spray booth is about five. The maximum number of cars that can be processed by a heated booth during one shift is eight. Some auto body repair businesses operate more than one shift per day thus increasing the number of cars processed.

Technology

Ten booths used in auto body repair from a variety of manufacturers have been tested as part of the process to certify a company's spray booth heating systems. These certified units comply with the Rule 1147 emission limit of 30 ppm NOx and with workplace exposure standards for CO. To date, all of the certified spray booths have used a burner system from MidCo. This new low NOx burner replaced line burners in a number of booth manufacturers heating units. Many of the previous units were built around a MidCo line burner. Since 2010, more than 125 low NOx heating systems based on the MidCo low NOx burner have been installed in the SCAQMD. The majority of these have been installed in heating units for new auto body spray booths.

Several spray booth manufacturers have taken advantage of the option to certify their booths and heating system. Certified models do not require individual emission tests. Currently there are 32 models of booths and heating systems from eight manufacturers certified compliant with the Rule 1147 emission limit. Non-certified models must perform individual tests in order to receive an SCAQMD permit. The SCAQMD certified systems vary from basic cross flow booths to down flow booths constructed with below ground air exhaust systems. The manufacturers represent a significant portion of the industry and include companies that manufacture their booths and heating systems in California.

The SCAQMD permitting group certifies the whole spray booth mechanical system including the combustion components. This approach significantly increases the cost of retrofitting existing spray booths with certified low NOx burners. To use an SCAQMD certified burner on a used spray booth, the owner/operator must also install a new heater box, blower, other mechanical components with a new thermostat and control system for moving air in addition to installing the burner, mounting hardware and combustion control system.

Other manufacturers have decided not to certify their heating units, but instead have decided to have their distributors and local installers test each new installation. For example, three auto body booths at one location have been tested and complied with the Rule 1147 NOx limit using a newer design line burner from Maxon.

Other types of booths and some auto body booths used for different applications have also been tested and comply with the Rule 1147 emissions limit. These units submitted individual emission test results. Thirteen test results have been submitted for booths that are not used for auto body repair. These booths use heating units or burners from Hastings, MidCo, PowerFlame, and Riello. In these cases, the air movement system and other components were not required to be replaced by the SCAQMD.

The burners in these other booths use a variety of technologies to achieve the emission limit of 30 ppm. The heater manufactured by Hastings is a roof mounted unit that can also be used to heat other processes or large building spaces such as a warehouse. All of the burners in these systems use premixing of air and fuel with a controlled amount of excess air to reduce emissions. The MidCo burner uses a knit steel fabric material to stabilize and spread the flame over a larger surface area to reduce peak flame temperature and NOx emissions. The Hastings, PowerFlame and Riello burners use premixing, swirl for mixing with air in the combustion zone and other technologies to keep emissions low. The new control systems for these low NOx burners can be the most important component of the system because they provide more precise tuning and control of the combustion process across the firing range of the burner.

Cost Effectiveness of Rule Compliant Spray Booth Heating Systems

NOx Emissions for most auto body spray booths average less than on half pound per day on an annual basis. NOx emissions contribute to the formation of secondary particulates in addition to ozone. A typical booths' annual average NOx emissions are less than one third pound per day. However, during late fall and winter when PM 2.5 concentrations can be high, daily NOx emissions can be two to three times annual average emissions.

The cost difference between a new certified rule compliant heated spray booth and a new non-compliant unit is less than \$10,000 on typical new booth based on information from manufacturers, vendors and the cost of booths prior to rule adoption. The cost for new units includes markups from the booth manufacturer applied to the cost of the burner, gas train and control system. Most of the specialty booths used for applications other than auto body repair were tested with standard burners, so there was no additional equipment cost to comply with Rule 1147 limits. However, the cost for adding a new natural gas fired certified heating system to an existing spray booth varies from \$30,000 to \$50,000 with a typical cost of about \$40,000. The cost varies depending upon the manufacturer, type of booth and the individual installation.

The cost of new booths are highly variable depending upon the type of booth and options. According to vendor supplied information, the cost to purchase and install a new spray booth is about 20% higher than in 2008 when Rule 1147 was adopted. This increase is consistent with industry data on the cost to purchase and install new equipment (i.e., Marshall & Swift Equipment Cost Index which includes inflation, the cost of materials and manufacturing costs). The typical new installation is a semi down draft (side draft) booth with for about \$80,000. A new basic cross draft booth without recirculation is less and costs \$65,000 to \$80,000. However, some vendors do not sell heated cross flow booths. The heating system and installation cost of the booth and heating constitute most of the cost for a new basic cross draft booth. A new full down draft booth is about \$115,000 and up depending upon options. Although the cost for semi down draft and down draft booths are higher than for a basic cross draft, the heating system costs are about the same for basic and premium booths from the same manufacturer or vendor.

The cost effectiveness for a new SCAQMD certified low NOx auto repair booth is at most \$22,000 per ton [(\$10,000 at most) / (70% reduction in NOx) X (0.25 lb/day / 2000 lb/ton) X 260 days/year X 20 years)]. In higher volume shops, the cost effectiveness is better (lower than \$22,000/ton).

The cost to retrofit a used booth to install in the SCAQMD as a new permitted unit is significantly less than purchasing a new booth. However, the cost effectiveness for retrofitting an existing in-use auto repair booth with a SCAQMD certified heating system is \$88,000 per ton of NOx reduced based on a cost of \$40,000 and a 20 year life. The cost of the heating system ranges from \$30,000 to \$50,000. For a high volume booth used two shifts a day, the cost effectiveness could be less than half this value (\$44,000/ton). For a booth retrofit costing \$30,000 the cost effectiveness is \$66,000 per ton. This cost effectiveness of retrofitting an existing permitted booth is higher than the minor source average cost-effectiveness criteria of \$27,000 per ton used by SCAQMD for equipment without defined BACT. Depending upon the number of cars processed per day, the retrofit cost effectiveness may also be higher than the BACT incremental cost effectiveness criteria of \$81,000 per ton.

It must be noted that depending upon the age of the used booth, the owner may have to upgrade the booth to meet current building and safety codes. The local building and safety agency may require mechanical, electrical, fire safety and other components be upgraded or replaced. These costs are not attributable to Rule 1147 and are also not included in the cost effectiveness analysis for new, modified or relocated units that require a new SCAQMD permit. The SCAQMD BACT Guidelines does not include the cost of compliance with non SCAQMD regulations in the calculation of cost effectiveness. The calculation of cost effectiveness is an analysis of the cost of new equipment and the cost of operating the new equipment. In the cost effectiveness analysis for new rule requirements, the recurring costs for new or modified equipment are those above and beyond the costs associated with original existing equipment.

The cost effectiveness for upgrading existing spray booths to comply with the Rule 1147 emission limit exceeds the minor source cost-effectiveness criteria of \$27,000 per ton used by SCAQMD for equipment categories without a defined BACT. However, the cost effectiveness for new units is at most \$22,000 per ton and is less than the BACT Guidelines criteria. Because the cost effectiveness to retrofit an existing permitted booth is significantly higher than the minor source BACT criteria, staff is considering amending Rule 1147 to delay compliance for existing in-use permitted booths and heating units until they are modified (modification of the combustion or air circulation system), relocated (including moved to a different location within the facility) or replaced. Staff is proposing that new, modified, or relocated units requiring an SCAQMD permit continue to be required to comply with the Rule 1147 NOx limit at the time of modification or installation. A change of ownership in a business with an existing in-use permitted booth would be exempt from the retrofit requirement unless the booth or heating unit is modified, relocated or replaced.

Appendix G – Crematories

CREMATORIES

Twenty crematories have been tested and comply with the Rule 1147 NOx emission limit. This list includes units tested with their original burners and units tested after replacing their burners. The burners tested in these units are manufactured by Eclipse, Facultatieve and others. The most common burner installed for new units in the SCAQMD and for replacing old burners is the Eclipse Thermjet, a medium to high velocity burner used in many high temperature applications including kilns, metal melting, heat treating and burn off furnaces.

Crematories are constructed as two integrated chambers each with their own burners. The first chamber is used for incineration and the second is an afterburner for reducing emissions of PM, VOCs and odors. Typically both chambers use the same type of high temperature burner but the size and number of burners in each chamber may differ. The primary chamber typically has one or two smaller burners than the one burner used in the secondary chamber afterburner section.

The Rule 1147 NOx emission limit for crematories is 60 ppm. The NOx emission concentrations for the tested crematories average 50 ppm with a range from 30 to 59 ppm. The 20 crematory tests that have been reviewed and comply with the emission limit include those with original burners and many units with new burners and control systems. Many crematories more than 20 years old had burners that are no longer produced and would not comply with the Rule 1147 emission limit. However, those crematories replaced their burners and comply with the 60 ppm NOx emission limit. Most crematories less than 20 years old have been installed with burners that comply with the Rule 1147 NOx emission limit and will not require replacement a retrofit. These units will only be required to demonstrate compliance through an emissions test.

The Rule 1147 test program has demonstrated that the NOx emission limit of 60 ppm is achieved by the burners and combustion control system available since the late 1990s. Crematories that have had their burners replaced use the same burners that are installed in new units. The average emission concentration from the tested units is 50 ppm and some units are significantly lower.

Appendix H – Fryers

FRYERS

There are two major types of fryers – conveyor and batch type. In addition, there are different types of heating systems including immersion tube heating in conveyor units and external oil heating systems for many batch type fryers. The external oil heaters use a heat exchanger with a gas fired burner or another heat source such as a thermal fluid heater regulated by SCAQMD Rules 1146.1 or 1146.2. Both types of fryers and heating systems have been tested and comply with the rule 1147 emission limit.

Seven existing in-use fryers have completed emission testing and comply with the Rule 1147 NOx emission limit of 60 ppm. The tested units are from three different manufacturers. All units were tested with their original burner systems. One unit is a conveyor fryer with many small immersion tube burners and a total heat rating of 1.5 mmBtu/hour. The other units use single burners with a heat exchanger and have heat ratings from 1.5 to 2.5 mmBtu/hour. The average NOx emissions are about 30 ppm with a range from 14 ppm to 56 ppm.

A variety of systems from three different manufacturers have been tested and comply with the Rule 1147 NOx emission limit. The units complied with the 60 ppm using different types of heating systems. Based on the units completing testing, the Rule 1147 emission limit is achievable with the original heating systems installed for these fryers.

Appendix I – Heated Process Tanks

HEATED PROCESS TANKS

Heated process tanks, parts washers and evaporators are a category of 1147 equipment for which it is difficult to accurately estimate the number of units that are subject to Rule 1147. While evaporators and parts washers with an integrated heated tank are typically separate units with their own permit, most process tanks are permitted as part of a process line with other processes and tanks. Because Rule 1147 only applies to units that require a permit; an individual tank is only subject to Rule 1147 if it is heated by burners and either has emissions of VOC, PM or toxic air contaminants or the rating of the burner system is greater than two million BTU per hour (2 mmBtu/hour).

For example, tanks with mixing from an air sparging system are more likely to have VOC, PM or toxic emissions and require emission controls and a permit than those that do not. Otherwise a tank is exempt from the requirement for a permit as defined by SCAQMD Rule 219. However, if a process tank does not require a permit, it is still included in the description of a process line in order to provide a complete description of the process for SCAQMD permitting and compliance staff. Process lines are permitted as one unit in order to reduce the cost and administrative burden of permitts.

There are approximately 1,400 process tanks identified in the SCAQMD permit system. About 1,200 of them are unheated, heated electrically or heated by a boiler. Of the remaining 200, at least 160 have burners rated less than the size requiring a permit. The number of heated process tanks subject to Rule 1147 is estimated to be between 20 and 40 with a best estimate of 25 units. The heat ratings of process tanks subject to Rule 1147 varies from 2.2 to 9 mmBtu/hour. Staff has also identified 23 evaporators with SCAQMD permits that are potentially subject to Rule 1147. There are also an unknown number of parts washers that are potentially subject to Rule 1147 depending upon their size, configuration and emissions. Tanks, evaporators and washers with electric, boiler steam or thermal fluid heating are exempt from Rule 1147. Equipment heated using a separate enclosed heated tank are potentially subject to SCAQMD Rules 1146, 1146.1 or 1146.2 which regulate boilers and enclosed process heaters.

Many heated process tanks, evaporators and parts washers use immersion heating tubes to heat a solution in a tank. Immersion tube burners fire into and heat a tube and that heat is transferred to the solution from the tube by conduction and convection. The efficiency of heat transfer depends upon the diameter and length of the tube. The efficiency of heat transfer in a tank system can vary from about 60% to over 90%.

To date only a few heated process tanks and evaporators have performed testing because some were installed within the last 15 years, others have emissions less than or equal to one pound per day and most are exempt because they do not require a permit. Seven units have been tested and reviewed by SCAQMD staff. None of these units replaced their burners. All tested units comply with the Rule 1147 NOx limit of 60 ppm for heated process tanks, evaporators and washers with their original burners. Process tanks, evaporators and washers with their own burners use a variety of heat exchange systems to heat a solution or assist in evaporation. Most process tanks use a constant diameter tube to heat a solution. Evaporators either use custom designed air to solution heat exchangers or constant diameter tubes to provide heat to a solution. Most parts washers use a custom designed heat exchange system or a separate water heater.

Custom designed heat exchange systems have various configurations but start out with a combustion zone with a larger cross section than the remainder of the heat exchanger. These systems typically start with a combustion chamber that is about 8 to 16 inches across that extends the full length of the burner's flame. The combustion section of the heat exchanger is large because manufacturers use burners that are designed for a wide variety of applications including boilers, furnaces and ovens.

Emission testing has been performed on three evaporators using custom designed heat exchangers – two units from Encon using MidCo burners and one unit from Lakeview Engineering unit using a burner from Industrial Combustion. The heat input for these systems are 220,000 and 650,000 Btu/hour for the Encon evaporators and 1.5 mmBtu/hour for the unit built by Lakeview Engineering. NOx emission for these units ranged from 25 to 52 ppm.

Most process tanks and some evaporators use a constant diameter tube system and immersion tube burners to heat the solution tank. However, there are three types of heat exchange systems using constant diameter tubes. Each system has its own range of tube diameter depending upon the amount of pressure the burner produces and the allowable heat input to an individual tube. In addition, burners for these systems can be set up in a variety of ways depending upon the type of process tank. Burners can be set to fire at a maximum firing rate and off, fire at a high and low rate or modulate and fire across the whole range of the burner. Burners can also be set to fire at a fixed amount of combustion air or variable amount of combustion air in order to maintain a constant ratio of fuel and air over the firing range of the burner.

The most common heating tube system typically has tubes that vary from about four inches up to 14 inches in diameter. Burners for this system are available from many manufacturers including Eclipse, Maxon, Selas/Pyronics and Titan Engineering. The heat input in this type of system varies from about 20,000 to 30,000 Btu per square inch of tube cross section in four and five inch tubes and 25,000 to 40,000 Btu per square inch in six to 14 inch diameter tubes. Three of these systems have been tested – two heated evaporator tanks from Proheatco and one heated evaporator tank from Poly Products. All of these systems use a burner with a maximum rating of 350,000 Btu/hour and 4 inch diameter heating tubes. NOx emissions from these three units vary from 30 to 55 ppm. In addition, preliminary testing of a unit at another facility with a higher output burner of about 3 mmBtu/hour indicates that unit has NOx emissions of 40 to 50 ppm.

Figure I-1 provides a summary of burner and tube characteristics of the three tested units from Proheatco and Poly Products. The figure illustrates that the units have firing rates (heat input per square inch) near the maximum recommended by three major manufacturers

for the most common type of tube immersion tube heating burners. This metric is important because it impacts the formation of NOx in the heating tubes. The information presented in Figure I-1 and the emission test data indicate that it is technically feasible to comply with the Rule 1147 NOx limit with the most common type of immersion heating burners.

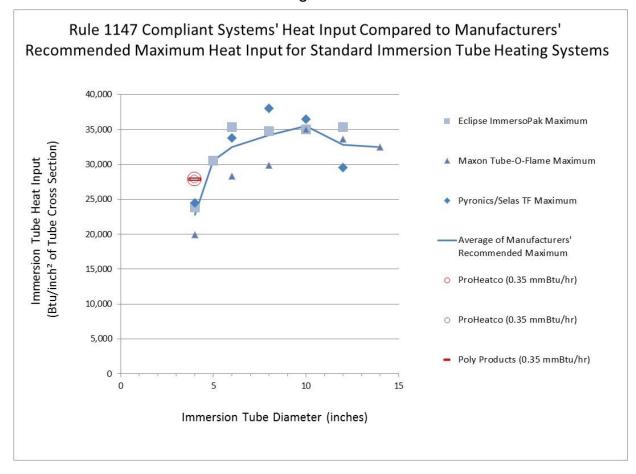


Figure I-1

A second type of tube heating system uses burners that produce higher pressures and can fire into smaller diameter tubes. This type of system uses tubes two to eight inches in diameter with heat inputs per tube cross sectional area double the heat inputs of the standard system discussed above. Eclipse, Maxon and PowerFlame manufacture burners for this type of application. There are currently no emission test results available for these types of burners so it is not possible to determine if they comply with the Rule 1147 NOx emission limit of 60 ppm.

A third type of tube heating system for process tanks has been installed in new heated tanks. This system has a new type of burner from Maxon (an XPO burner) that requires larger diameter tubes (14 inches and above). An SCAQMD approved emissions test on one of these systems (required for Regulation XIII and new source review) with a 3.3 mmBtu/hour burner showed emissions of 4 ppm NOx at high fire and 34 ppm at low fire.

The Rule 1147 testing program has identified three types of heating systems used in process tanks and evaporators that comply with the NOx emission limit. There is no information yet available for a fourth type of heating system that uses high pressure burners firing into smaller diameter tubes of 2 to 8 inches. A fifth type of tank heating system with tube firing burners used in heat treating also been demonstrated to meet the 60 ppm NOx limit but have not yet been tested in heated tank applications.

For all five types of tank heating systems, the burners and heat exchangers or tubes are designed as one integrated system. If an individual heated tank or evaporator system using any of the four systems does not comply with the emission limit, then the whole tank will likely have to be replaced. Delaying compliance for existing in-use units from the rule emission limit until the combustion system is modified or replaced will address the issue that it is not feasible to retrofit an existing heated tank with different burners. If a tank is retrofitted with new burners, the owner will replace the heating tubes or heat exchanger. If the owner rebuilds a process tank, then a rule compliant system can be installed at that time.

SCAQMD staff is considering to amend Rule 1147 to delay compliance with the NOx emission limit for existing in-use process tanks, evaporators and parts washers with an integrated heated tank until the combustion system is modified or replaced. New units would still be required to meet the emission limit unless the total unit heat rating is less than or equal to 325,000 Btu/hour. Staff estimates this change would affect less than 50 heated tanks and evaporators currently subject to the Rule 1147 emission limit. There are more than 1,200 process tanks which are not subject to Rule 1147 requirements because they are exempt from the requirement for a permit by SCAQMD Rule 219, are unheated or are heated electrically or with a boiler.

Appendix J – Heat Treating

HEAT TREATING

Heat treating typically involves heating metals or alloys in a furnace or oven in order to develop specific properties in the metal or alloy before and after a part is made. However, heating can also be used to treat metals and nonmetallic refractory materials in a manufactured vessel, furnace or other product using temporary burners systems. The burners used in these systems are the same kinds of burners used in direct fired heat treating furnaces and kilns. Kilns are used for heat treating products made from ceramics, clay and other non-metallic materials.

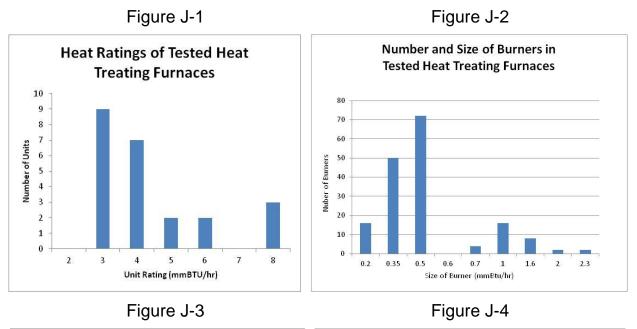
Metal heat treating temperatures vary from a few hundred degrees Fahrenheit, used in tempering, to over 2,100 degrees for forging steel and titanium. With the exception of tempering, steel and titanium alloy heat treatments are typically at higher temperatures than for non-ferrous alloys based on aluminum. Kilns processing non-metallic materials also vary temperature depending upon the material and final product.

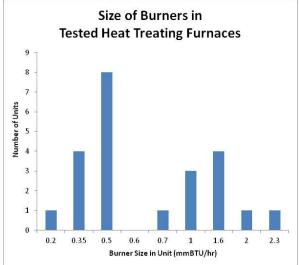
The type of burners used for heat treating depend upon the temperature required and whether they fire directly into the furnace or into tubes and heat is then transferred from the tubes to the furnace by fans. Lower temperature heat treating ovens have burners that are typically found in other types of ovens including air heating burners such as Eclipse Winnox and Maxon Cyclomax burners. Higher temperature direct fired furnaces typically use a different type of burner with a higher flame velocity, longer flame length and more radiant heat output for heating refractory material in the furnace or the tubes they fire into. High velocity burners are also used because they increase mixing and eliminate temperature stratification in direct fired furnaces. The new control systems for these low NOx burners are an important component of the system because they provide more precise tuning and control of the combustion process across the firing range of the burner.

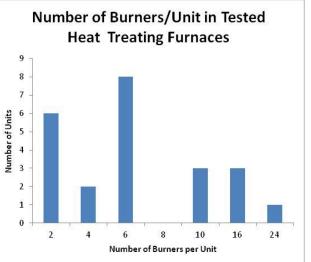
Indirect fired furnaces typically have specialized tube firing burners. However, high velocity burners, similar to those found in direct fired applications, have also been used in indirect fired furnaces permitted in the SCAQMD. Temperature stratification in indirect fired furnaces is avoided because large fans move the air in the furnace past the tubes and into the section where the material being treated is held. High velocity and tube firing burners are available from many manufacturers including North American/Fives, Bloom, Eclipse, Maxon, Hot Work, Hauck, Industrial Combustion, and Selas. Tube firing burners from a number of manufacturers including Bloom, Hauck, North American/Fives, and Eclipse also have an option to add flue gas recirculation (FGR) to reduce NOx emissions.

Heat treating furnace designs have evolved over time. Newer furnace designs have more and smaller burners than many earlier designs. For both direct and indirect fired furnaces, more burners provide better control of the temperature profile in the furnace. Finer control of the furnace temperature allows the operator to meet newer more stringent temperature uniformity requirements than those that were in existence when older furnace designs were first built. Some of the older furnace designs predate modern temperature uniformity standards developed since the 1970s. The number and type of burners used in a furnace depend upon the size of the furnace, type of heat treating, process temperature and temperature uniformity requirements of the heat treating processes performed by the furnace.

Figures J-1 to J-4 summarizes the size and number of burners in the heat treating furnaces that have successfully completed emission testing. This information indicates that most of the burners used have heat ratings of 0.5 mmBtu/hour (500,000 Btu/hour) or less and the largest burners are about 2 mmBtu/hour. The largest furnaces have a heat rating of about 8 mmBtu/hour. There are furnaces permitted in the SCAQMD with larger heat ratings, but they are found at facilities in the RECLAIM program and are exempt from Rule 1147.







The emission test results for heat treating furnaces indicate most furnace NOx emission concentrations are in the range from 45 ppm to 55 ppm with an average of about 50 ppm. These results cover a variety of furnaces processing aluminum and steel alloys across a broad temperature range. Some of the furnaces were new and were required to meet the new source BACT requirement of 50 ppm NOx, but most have been in use long before Rule 1147 was adopted in 2008 and before the BACT limit of 50 ppm was put in place in 2000. To date, only a few furnaces have had their burners replaced, added an FGR system or replaced their furnace in order to comply with Rule 1147. Most heat treating furnaces tested have met the Rule 1147 emission limit with their existing burners.

Kilns use the same burners that are found in direct fired heat treating furnaces and crematories. Kilns are used to heat treat clay, ceramic and other nonmetallic materials. Kilns are also used to heat treat glazes and other coatings applied to products made from these materials. Rule development staff have not yet received new emission test results for kilns from the Rule 1147 testing program. However, there were a number of emission tests completed on small and large kilns prior to rule adoption in 2008 and the rule amendment in 2011. These test results are summarized in Appendix B of this document. The emission test results demonstrate that a variety of kilns comply with the Rule 1147 emission limit of 60 ppm NOx with the burners installed prior to rule adoption. In addition, many small kilns are not subject to Rule 1147 because they are exempt from the requirement for a permit under SCAQMD Rule 219 (some of these use electric heat).

Appendix K – Metal Melting

METAL MELTING

A variety of metal melting furnaces are subject to Rule 1147. They include small pot and crucible furnaces for melting lead, lead alloys, aluminum, zinc and zinc alloys and larger units including kettle furnaces for galvanizing and reverberatory furnaces for melting aluminum. There are about 170 metal melting furnaces potentially subject to Rule 1147 NOx emission limits. Most of the furnaces subject to Rule 1147 melt non-ferrous metals and alloys. Furnaces for melting iron or making steel are often electric and therefore not subject to Rule 1147. There are also many furnaces at large facilities which are exempt from Rule 1147 because the facility is in the RECLAIM program.

To date, most of the metal melting furnaces tested complied with the Rule 1147 NOx limit with the burners in place when the rule was adopted. All of the larger kettle and reverberatory furnaces passed the emission limit with their original burners. However, one kettle furnace and one reverberatory furnace were recently built to replace older units and were subject to BACT under new source review. The four larger furnaces whose permits identified the burner manufacturer had Eclipse burners.

Of the five small pot and crucible melting furnaces tested, three furnaces met the emission limit with their original burners. The other two units had their burners replaced before testing. This type of furnaces can be built with burners from many manufacturers including Eclipse, Maxon, MidCo and others. One pot furnace had its original burner replaced with an Eclipse Ratio Air burner in order to comply with the NOx emission limit of 60 ppm. The new burner also had low CO emissions. A second company chose to replace two burners on a large pot furnace (2 mmBtu/hour originally) with one larger 2.4 mmBtu/hour Maxon Kinedizer LE burner, but it is not known whether the original burners would have met the Rule 1147 NOx limit. The burners were replaced in order to increase production of the furnace and to reduce fuel consumption and emissions. The new configurations was subject to BACT under new source review and complies with the Rule 1147 NOx emission limit and has low CO emissions.

The heat ratings of the pot/crucible furnaces tested ranged from 0.5 - 2.4 mmBtu/hour. The NOx emissions for these pot/crucible furnaces were in the range of 49 to 60 ppm. The eight kettle and reverberatory furnaces have unit heat ratings from 1.2 - 6 mmBtu/hour with emission ranging from 40 ppm to 53 ppm. However, the units greater than 4 mmBtu/hour have multiple burners rated 1.2 - 1.5 mmBtu/hour. The highest heat rating for a unit with one burner is 2 mmBtu/hour. There are furnaces with larger heat ratings permitted in the SCAQMD, but they are at facilities in the RECLAIM program and are exempt from Rule 1147.

The eight metal melting furnaces tested complied with the Rule 1147 NOx emission limit. Two of the units were new and built to replace old units. It is not known whether the old units would comply with the emission limit. One pot/crucible furnace was rebuilt with a larger burner to increase capacity. Another small pot furnace had its burner replaced to comply with the Rule 1147 NOx emission limit. All of the unmodified units, the new units and the units with replaced burners complied with the rule emission limit.

Appendix L – Multi-chamber Burn-off Ovens and Incinerators

MULTI-CHAMBER BURN-OFF OVENS AND INCINERATORS

This category includes various equipment that are used for similar purpose but named differently. These units may be called burn-off or burn-out ovens, kilns or furnaces and incinerators. However, all of the units perform a similar function and operate in a similar fashion. They are built with a primary chamber for melting, vaporizing or pyrolizing some material on a part or piece of equipment in order to recycle the material or component. Some units are used for incinerating material that cannot be reclaimed or must be incinerated prior to disposal. The primary chamber leads to an integrated secondary afterburner chamber that destroys particulate matter, carbon monoxide, VOCs and any other organic material that enter this afterburner section. The incinerated material is reduced to carbon dioxide and water vapor.

The Rule 1147 NOx emission limit for the primary chamber of a furnace depends upon the process temperature in this burn-off chamber. If the process temperature exceeds 800 °F, then the NOx emission limit in the primary chamber is 60 ppm. If the process temperature is lower, then the NOx limit is 30 ppm which is consistent with a typical oven or low temperature furnace operating at those temperatures. The NOx limit for the secondary afterburner chamber is 60 ppm NOx and the same as for other afterburners.

Twelve burn-off ovens, furnaces and incinerators have completed review of their test results. Most units were tested with original burners. The number of burners in these units varies from two to six burners and the most common configuration has two or three burners. The heat ratings of the units range from 0.5 to 2.2 mmBtu/hour. The average NOx concentration in the stack after the afterburner section is less than 45 ppm and the range is from 26 to 54 ppm.

Discussion with a local manufacturer of burn-off furnaces indicates that it is not possible to use the preferred type of burner and meet a 30 ppm emission limit in the primary chamber for a process temperature less than 800 °F. The typical burner that is used to remove materials from a part is the same type of high temperature medium to high velocity burner used in crematories, kilns, heat treating and some types of afterburners. These burners are designed to have NOx emissions in the 40 to 60 ppm range.

The manufacturer has tested a design with an air heating burner in the afterburner section to achieve emissions of less than 30 ppm in the secondary chamber and meet an average emission limit for the two chambers of less than 45 ppm NOx. However, this redesign will not achieve the required PM, VOC and carbon monoxide reductions in all applications. In addition, using the averaging provision of the rule may not always achieve compliance with the NOx limit. Company representatives have suggested that since it is not always possible to comply with the emission limit of 30 ppm in the primary chamber of these types of devices, the NOx limit in the primary chamber should be 60 ppm NOx regardless of the process temperature. SCAQMD staff agree with this assessment and are considering a rule change that the NOx emission limit in both chambers of this type of equipment should be

60 ppm at any process temperature. This change in the rule limit would affect a small number of equipment regulated by Rule 1147.

Appendix M – Ovens and Dryers

OVENS AND DRYERS

Excluding spray booth systems, the number of ovens and dryers under permit in the SCAQMD is slightly less than 1,200 units. This is the second largest category of equipment regulated by Rule 1147. These units are used in a variety of processes including curing of coatings and other materials, drying coated and printed products, and drying materials. The oven or dryer can be a small enclosed batch oven with a heating system, a large walk in oven, a conveyor system with a coating tank or coating spray station followed by a heated oven, or a drying room with a unit heater. Some printing and all textile drying operations use large conveyor units with multiple burners for high speed production of large quantities.

There are a variety of burners used in ovens and dryers. Each type of burner has its own characteristic emission profile. For example, radiant infrared burners have low emissions and NOx concentrations are typically less than 20 ppm. The most common type of burners used are nozzle mixing air heating burners. Some of the same types of ovens use premix burners with a metal fiber fabric cylinder or panel as a flame holding surface. Other units are designed to use line type air heating burners. Some small ovens and large conveyor systems use many flat panel radiant infrared burners. Powder coating operations are one of the processes that use radiant burners. Radiant infrared burners are required to directly heat a part in order to melt and then cure the coating. Ovens in which combustion gases cannot come in contact with the produce use indirect fired heater units with an air to air heat exchanger to provide clean heated air to the oven. However, both direct and indirect-fired unit heaters can be used to provide heat and move air through large drying ovens or rooms.

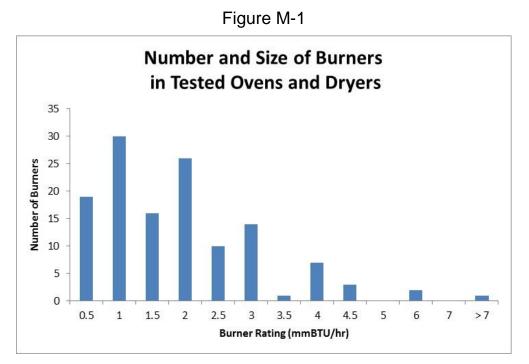
Ovens subject to the Rule 1147 NOx emission limit use burners from a number of manufacturers. The most common burners used in the SCAQMD are line and nozzle mix burners manufactured by Eclipse and Maxon. Two thirds of the tested ovens and dryers use Maxon burners and one fourth of the units use Eclipse burners. Eclipse burners used in compliant ovens and dryers include the Eclipse Winnox and Linnox product lines. Maxon burners used in compliant ovens include several versions of the OvenPak series, the Cyclomax, the LN-4 line burner and the Kinedizer. However, low NOx burners from other manufacturers including MidCo, PowerFlame, Riello, and Yukon also comply with the Rule 1147 NOx emission limit. The newer control systems for these low NOx burners are the most important component of the combustion system because they offer more precise tuning and control of the combustion process across the firing range of the burner.

Most ovens and dryers tested use only one burner. However, coating, printing and curing lines often have multiple burners. Many coating and printing lines use two identical burners, but the oven section of a coating line can also have up to 40 infrared radiant panels.

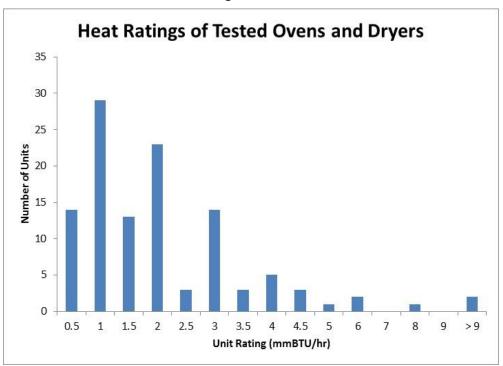
The tested ovens' heat ratings varies across a wide range from 0.4 mmBtu/hour for a small batch oven up to 20.5 mmBtu/hour for a large rotary dryer. However, most ovens have ratings less than 2.5 mmBtu/hour. Most burners in ovens with multiple burners are also

less than 2.5 mmBtu/hour. The most common size of burner installed in all types of oven is 1.0 mmBtu/hour.

Figures M-1 through M-4 identify burner heat rating, number of burners and the range of the heat ratings for the tested units. Printing oven and textile dryer data is not included in Figures M-1 and M-2. Printing oven data is summarized in Figures M-3 and M-4.







9 8

Number of Burners

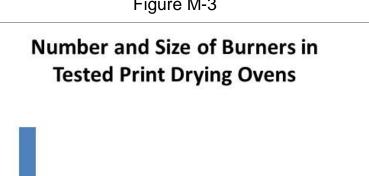


Figure M-3

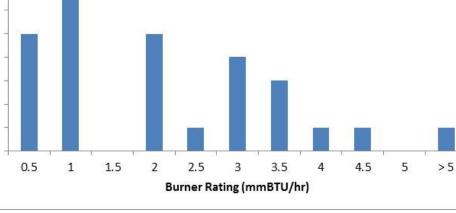
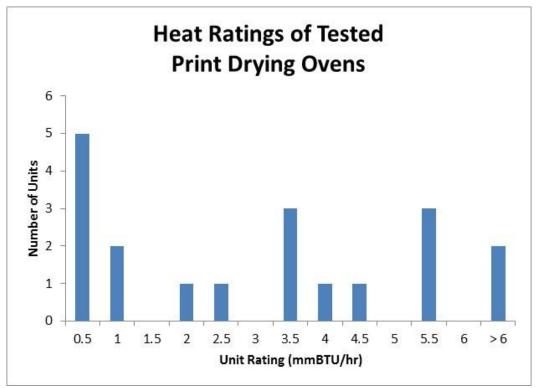


Figure M-4



Printing oven and dryer heat ratings vary from about 0.4 mmBtu/hour to 7.4 mmBtu/hour. The most common burner size in these ovens is also 1.0 mmBtu/hour. Textile tenter dryers typically have eight or nine burners that are rated less than 1.0 mmBtu/hour. The other type of textile dryer typically has four burners each rated about 1.0 mmBtu/hour.

The emission test results for ovens and dryers indicate that all types of units tested comply with the Rule 1147 NOx emission limit. Table M-1 provides a summary of the completed Rule 1147 emission tests for ovens and dryers. At this time, 140 units used for a variety of processes have approved test results and comply with the 30 ppm NOx limit. The average emission concentration for most ovens and dryers is about 20 ppm NOx. The average emission concentration for textile dryers is about 25 ppm NOx. The range of emission concentrations for all ovens and dryers is from 4 ppm to 30 ppm. The range emission concentrations for printing lines and ovens is 4 ppm to 29 ppm and for textile dryers is 14 ppm to 27 ppm. In addition, two ovens complied with the rule limit by averaging emissions from the oven and an afterburner that must comply with a NOx emission limit of 60 ppm.

Equipment Category	Rule 1147 NOx Limit (ppm ¹)	Number of Units Tested at Normal/High Fire	Average NOx Concentration at Normal/High Fire (ppm)	Number of Units Tested at Low Fire	Average NOx Concentration at Low Fire (ppm)
Oven/Dryer	30 or 60 ²	112	20	35	21
Print Dryer/Oven	30	19	20	4	23
Textile Shrink Dryer	30	2	24		
Textile Tenter Dryer	30	4	23	4	26
Unit Heater	30 or 60 ²	3	20	1	13
Number of Units		140		44	

Table	M-1
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Rule 1147 Emissions Test Results for Ovens and Dryers

¹ The Rule 1147 NOx limit is based on a reference level of 3% oxygen (O_2) in the exhaust. All emission test results are converted to a concentration in parts per million at the reference level of 3% O_2 .

² The emission limit depends upon the process temperature.

The results from the Rule 1147 emission testing program indicate that rule compliant technology is available for ovens and dryers from many sources. In addition, all of the types of ovens and dryers under permit in the SCAQMD can comply with the Rule 1147 NOx limit. However, there is a lower limit on the availability of low NOx burners for ovens and dryers. The smallest low NOx burners available are rated 0.4 and 0.5 mmBtu/hour (400,000 and 500,000 Btu/hour). Burners in this size are available from a number of manufacturers including Eclipse, Maxon, MidCo and PowerFlame. For lower firing rates, oven manufacturers will use this size of burner but limit the firing rate to less than the burner's maximum capacity. If these burners must regularly operate at less than 30% of the maximum firing rate, it may be difficult to comply with the NOx emission limit. Because there is a lower limit on the size of compliant burners for ovens and dryers, staff is considering an exemption from the Rule 1147 NOx emission limit for units with heat input capacities less than 325,000 Btu/hour.

Appendix N – Food Ovens

FOOD OVENS

Food ovens in use at the time SCAQMD Rule 1153.1 was adopted are no longer subject to Rule 1147. However, new food ovens are currently subject to Rule 1147 requirements. Staff are currently evaluating alternative rule development options for exempting new food ovens from Rule 1147. Although new food ovens may be exempt from Rule 1147 in the future, some operators of food ovens have reported results under the rule's emission testing program. At the time of this report, 13 food ovens used for a variety of baking and cooking operations have completed testing under the Rule 1147 program.

These ovens use burners from many manufacturers including Eclipse, Ensign/Selas, Flynn, Maxon and Weishaupt. Eclipse, Maxon and Weishaupt burners air heating burners are used in both batch and conveyor type convective ovens. Ensign and Flynn provide ribbon burners for heating specific types of conveyor ovens and some small batch ovens. For example, conveyor ovens with moving bands that must be heated in order to cook products on the band such as chips and crackers require ribbon or a similar type of burner. Batch type convective ovens can use a variety of burners and do not require ribbon burners. In addition, there are many conveyor type convective ovens use air heating nozzle mix or line burners.

Radiant infrared burners are used in both batch and conveyor ovens. This type of burner is available from many manufacturers including those identified earlier in this discussion. Three bakery ovens using only radiant infrared burners were tested and complied with Rule 1147 and Rule 1153.1 emission limits. This type of burner is used in both batch type and conveyor type ovens. The average NOx emission concentration for these burners is 13 ppm with a range of 6 to 19 ppm. Ovens with radiant infrared burners are exempt from the Rule 1153.1 requirement to perform an emissions test because these burners have NOx emissions significantly less than the emission limits in the rule (40 and 60 ppm NOx).

Four ovens with ribbon burners have been tested through the Rule 1147 emission testing program. Two baking ovens with operating temperatures less than 500 °F both had NOx emission concentrations of 21 ppm at their high or normal fire rate. One had NOx emission concentrations of 26 ppm at low fire. One of the units is used for baking tortillas and the other unit is used for baking breads and snacks. In addition, two griddle ovens used for making English muffins and other products cooked in griddles had emission concentrations of 41 ppm and 45 ppm. Griddle ovens with ribbon burners typically operate at temperatures above 500 °F. Both of these ovens comply with the Rule 1153.1 NOx emission limit of 60 ppm for this process temperature.

Five convection type ovens using nozzle mix air heating burners have been tested and comply with Rule 1147 and 1153.1 NOx emission limits. Two of the ovens are used to cook meat products and three cook breads and snacks. These ovens have average emission concentrations of 25 ppm NOx with a range of 22 ppm to 30 ppm. One of these units has a permit limit of 25 ppm NOx that was established prior to adoption of Rule 1147. This

oven has been operating for more than seven years with this permit condition and demonstrates that a 25 ppm NOx emission limit is achieved in practice for convection ovens.

The remaining oven that was tested is used for cooking meat and has two cooking sections. The first section is a charbroiler and the second is a convective heating section using steam and heated air. The heated air in the second section is produced using an Eclipse Air Heat line burner. The NOx emission concentration from all burners for this unit was 33 ppm. This result demonstrates compliance with Rule 1153.1 NOx emission limits of 40 ppm and 60 ppm. However, given the design and purpose of this unit, the first section of this device is exempt from the emission limits of Rules 1147 and Rule 1153.1 was not taken into account when the emission test protocol was prepared for this unit.

The results for the 13 food ovens tested through the Rule 1147 program indicate that every type of food oven and burner comply with Rule 1153.1 NOx emission limits. In addition, convection ovens using air heating burners, ovens with radiant infrared burners and conveyor type food ovens with ribbon burners operating at less than 500 °F also comply with the Rule 1147 NOx emission limit of 30 ppm. Moreover, another conveyor oven with ribbon burners and a process temperature less than 500 °F was tested prior to Rule 1147 adoption and had NOx emissions of less than 30 ppm (Figure B-5, Appendix B).

Currently, there are projects funded by SEMPRA Energy and the California Energy Commission to reduce NOx emissions from ribbon burners used in commercial and residential cooking ovens. The data from the Rule 1147 and Rule 1153.1 emissions testing programs and these technology projects will provide staff with data to determine how Rule 1147 and Rule 1153.1 should be amended in the future to limit NOx emissions from new food ovens.

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1 Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 26

PROPOSAL: Status Report on Major Projects for Information Management Scheduled to Start During Last Six Months of FY 2015-16

- SYNOPSIS: Information Management is responsible for data systems management services in support of all SCAQMD operations. This action is to provide the monthly status report on major automation contracts and projects to be initiated by Information Management during the last six months of FY 2015-16.
- COMMITTEE: No Committee Review

RECOMMENDED ACTION: Receive and file.

Barry R. Wallerstein, D.Env. Executive Officer

JCM:MAH:OSM:agg

Background

Information Management (IM) provides a wide range of information systems and services in support of all SCAQMD operations. IM's primary goal is to provide automated tools and systems to implement Board-approved rules and regulations, and to improve internal efficiencies. The annual Budget specifies projects planned during the fiscal year to develop, acquire, enhance, or maintain mission-critical information systems.

Summary of Report

The attached report identifies each of the major projects/contracts or purchases that are expected to come before the Board between January 1 and June 30, 2016. Information provided for each project includes a brief project description, FY 2015-16 Budget, and the schedule associated with known major milestones (issue RFP/RFQ, execute contract, etc.).

Attachment

Information Management Major Projects for Period January 1 through June 30, 2016

ATTACHMENT March 4, 2016 Board Meeting Information Management Major Projects for the Period January 1 through June 30, 2016

Item	Brief Description	Budgeted Funds	Schedule of Board Actions	Status
SCAQMD Cross-Media Electronic Reporting Regulation (CROMERR) Application Package Submission to U.S. EPA	Seek approval for submission of the SCAQMD consolidated application package to U.S. EPA for review and approval.	Not Applicable	Approve CROMERR application package, January 8, 2016)	Completed
Prequalify Vendor List for PCs, Network Hardware, etc.	Establish list of prequalified vendors to provide customer, network, and printer hardware and software, and to purchase desktop computer hardware upgrades	\$300,000	Release RFQQ November 6, 2015; Approve Vendors List and Award Purchase February 5, 2016	Completed
Systems Development, Maintenance, and Support	 Provide development, maintenance and support for: Web application system development CLASS systems enhancements CLASS systems maintenance 	\$571,050	February 5, 2016	Completed
Enterprise Content Management System	Select vendor to provide a high quality ECM solution to capture, store and manage a robust workflow; and deliver documents and electronic files related to the organizational processes.	TBD	Release RFP December 4, 2015; Award Contract April 1, 2016	On Schedule

Double-lined Rows - Board Agenda items current for this month
Shaded Rows - activities completed



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 27

REPORT: FY 2015-16 Contract Activity

SYNOPSIS: This report lists the number of contracts let during the first six months of FY 2015-16, the respective dollar amounts, award type, and the authorized contract signatory for the SCAQMD.

COMMITTEE: No Committee Review

RECOMMENDED ACTION: Receive and file.

Barry R. Wallerstein, D.Env. Executive Officer

MOK:DH:EA:lg

Background

Since FY 1995-96, staff has provided semi-annual reports to the Board on contract activity. This report identifies five categories of contract awards: 1) New Awards – new contracts for professional services and research projects; 2) Other – air monitoring station leases, Board Assistant agreements, or other miscellaneous agreements; 3) Sponsorships – contracts funding public events and technical conferences which provide air quality benefits; 4) Amendments – modifications to existing contracts usually reflecting changes in the project scope and/or schedule; 5) Terminated Contracts – Partial/No Work Performed – modifications to contract funding. The report further specifies under New Awards, which contracts were awarded competitively and which were awarded on a sole-source basis. Within the first four categories, the level of approval (Board or Executive Officer) is indicated.

Summary

Of the 226 contracts and modifications (including terminations) issued during this period, New Awards accounted for 108, Other accounted for 23, Sponsorships accounted for 4, and Modifications accounted for 91.

The total value for New Awards was \$59,024,939.16. Of this amount, \$41,920,187.00 or 71% was awarded through the competitive process. The majority of contracts awarded through a non-competitive process were related to technology advancement projects funded by federal grants where the contractor was specified in the federal grant award. The total value of all contracts and contract modifications for this period was \$64,226,585.22 with 109 contracts and contract modifications totaling \$62,517,658.00 (97%) approved by the Board and 111 contracts and contract modifications totaling \$1,670,160.05 (3%) approved by the Executive Officer. This does not include contract modifications for termination with partial work or no work completed which is addressed below. Of this amount \$756,267.06 (45%) representing 24 contracts and contract modifications was for Board Member Assistant contracts as approved by the Board's Administrative Committee; \$487,674.99 (29%) representing 13 contracts awarded on a sole source and competitive basis in the areas of technical consulting and litigation/legal services; \$66,500.00 (4%) representing 4 contracts was for sponsorships and outreach events; and \$58,771.00 (4%) representing 7 contracts was for miscellaneous goods and services; and \$300,947.00 (18%) representing 62 contracts was for contract modifications for extensions of time or additional budgeted services from previously approved vendors. Contract terminations with partial or no work completed numbered 6 during this period and de-obligated a total of \$668,156.00.

CONTRACT CATEGORY	NUMBER	AMOUNT
NEW AWARDS	108	\$59,024,939.16
OTHER	23	\$727,199.89
SPONSORSHIPS	4	\$66,500.00
MODIFICATIONS	85	\$4,407,946.17
TERMINATIONS	6	-\$668,156.00

Attachment

Contract Activity Report for the period July 1, 2015 through December 31, 2015.

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
I. NE	W AWARDS						
Com	petitive - Board Approved						
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15501	32	REPLACEMENT OF 5 OFF-ROAD VEHICLES	ALLAN COMPANY	\$269,981.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15524	32	REPOWER 1 MAIN ENGINE ON 1 MARINE VESSEL	JIM KINGSMILL	\$122,375.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15540	32	REPOWER 2 MAIN ENGINES ON 1 MARINE VESSEL	TOMMY LEE BROOKS	\$240,550.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15545	32	REPOWER OF 1 MAIN ENGINE AND 1 AUXILIARY ENGINE ON 1 MARINE VESSEL	STEVEN MARDESICH	\$137,517.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15557	32	REPOWER 2 MAIN ENGINES ON 1 MARINE VESSEL	STEVE F SUMMERS	\$185,300.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C15560	01	ELEVATOR CAB INTERIOR REFURBISHMENT	THYSSENKRUPP ELEVATOR CORP	\$75,778.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15561	32	REPOWER 2 MAIN ENGINES ON 1 MARINE VESSEL	ENDEAVOUR OCEAN ADVENTURES	\$214,200.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15588	36	COMMERCIAL-GRADE ELECTRIC LAWN & GARDEN EQUIPMENT DEMONSTRATION PROGRAM	THE GREENSTATION	\$77,995.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15591	81	PROP 1B TRUCK REPLACEMENT PROGRAM - OPERATION ONLY	RODVOLD ENTERPRISES INC	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15593	81	PROP 1B TRUCK REPLACEMENT PROGRAM - OPERATION ONLY	WEST END ENGINEERING, INC.	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15606	32	OPERATION OF 1 PAVER 1 MATERIAL TRANSFER PLACER AND 1 GRADER	BROSAMER AND WALL INC	\$0.00	1
04	FINANCE	C15608	01	SCAQMD INDEPENDENT AUDIT SERVICES	SIMPSON & SIMPSON, CPAs	\$84,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15626	31	DEVELOPMENT, INTEGRATION, AND DEMONSTRATION OF ULTRA-LOW EMISSION NATURAL GAS ENGINES FOR ON-ROAD HEAVY- DUTY VEHICLES	CUMMINS WESTPORT INC	\$3,500,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15628	54	ADVANCED OPTICAL REMOTE SENSING TECHNOLOGIES AT REFINERIES, OTHER VOC SOURCES AND MARINE VESSELS	FLUXSENSE AB	\$511,861.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15637	54	ADVANCED OPTICAL REMOTE SENSING TECHNOLOGIES AT REFINERIES, OTHER VOC SOURCES AND MARINE VESSELS	KASSAY FIELD SERVICES, INC.	\$155,182.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15638	54	ADVANCED OPTICAL REMOTE SENSING TECHNOLOGIES AT REFINERIES, OTHER VOC SOURCES AND MARINE VESSELS	ATMOSFIR OPTICS LTD	\$145,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15639	32	OPERATION OF 4 OFF-ROAD VEHICLES	MESA GENERAL ENGINEERING INC	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15642	32	OPERATION OF ONE MARINE VESSEL	BRYAN HOLTAN	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15653	54	ADVANCED OPTICAL REMOTE SENSING TECHNOLOGIES AT REFINERIES, OTHER VOC SOURCES AND MARINE VESSELS	NPL MANAGEMENT LIMITED	\$288,762.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15662	36	INSTALLATION, COMMISSIONING, AND REPORTING OF A 1.4 MW RENEWABLE ON-SITE BIOGAS FUEL CELL WITH ANAEROBIC DIGESTER GAS CLEAN-UP SYSTEM AND HEAT RECOVERY UNIT, AND INSTALLATION OF 2 ELECTRIC VEHICLE CHARGERS WITH INTEGRATED BATTERY STORAGE.	OTTO H ROSENTRETER COMPANY	\$2,500,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15664	32	REPOWER 9 OFF-ROAD VEHICLES	PEED EQUIPMENT COMPANY	\$2,540,779.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15678	81	PROP 1B TRUCK REPLACEMENT PROGRAM - OPERATION ONLY	DIESEL DIRECT WEST, INC.	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15679	81	PROP 1B TRUCK REPLACEMENT PROGRAM - OPERATION ONLY	AMBER PETROLEUM PRODUCTS, INC.	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16056	80	REPLACE 10 AND PURCHASE 1 DIESEL LOCOMOTIVE	SO CALIFORNIA REGIONAL RAIL AUTHORITY	\$22,850,000.00	
27	INFORMATION MANAGEMENT	C16065	2	AUDIO-VISUAL SYSTEM UPGRADES IN THE HEARING BOARD AND GB ROOM AT THE SCAQMD HEADQUARTERS	DIGITAL NETWORKS GROUP, INC.	\$339,676.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16072	81	PROP 1B TRUCK REPLACEMENT PROGRAM - OPERATION ONLY	GNA TRANSPORTATION	\$0.00	1
35	LEGISLATIVE & PUBLIC AFFAIRS	C16074	01	ENVIRONMENTAL JUSTICE COMMUNITY PARTNERSHIP (THE PARTNERSHIP) INITIATIVE	LEE ANDREWS GROUP INC	\$160,000.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
26	PLANNING RULE DEV & AREA SOURCES	C16080	01	ENHANCEMENT OF WEB-BASED ANNUAL EMISSIONS REPORTING TOOL	ECOTEK INC	\$149,993.00	
26	PLANNING RULE DEV & AREA SOURCES	C16082	01	REVIEW OF SECTORAL ECONOMIC IMPACT ANALYSIS FOR SMALL SCALE IMPACTS	INDUSTRIAL ECONOMICS INCORPORATED	\$49,993.60	
26	PLANNING RULE DEV & AREA SOURCES	C16083	01	REVIEW OF ENVIRONMENTAL JUSTICE METHODOLOGIES AND APPLICATION TOOLS	INDUSTRIAL ECONOMICS INCORPORATED	\$74,116.40	
16	ADMINISTRATIVE & HUMAN RESOURCES	C16135	01	SECURITY GUARD SERVICES AT SCAQMD DIAMOND BAR HEADQUARTERS	CONTACT SECURITY INC.	\$1,466,418.00	
26	PLANNING RULE DEV & AREA SOURCES	C16139	01	CEQA CONSULTANT ASSISTANCE SERVICES	ENVIRONMENTAL AUDIT INC	\$125,000.00	
27	INFORMATION MANAGEMENT	C16155	01	PROVIDE SCAQMD WEBSITE EVALUATION AND IMPROVEMENT SERVICES	XIVIC INC	\$18,760.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C16157	01	PROVIDE WASHINGTON DC LEGISLATIVE REPRESENTATION	KADESH & ASSOCIATES LLC	\$226,400.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C16158	01	PROVIDE WASHINGTON DC LEGISLATIVE REPRESENTATION	CARMEN GROUP, INC	\$222,090.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C16159	01	PROVIDE WASHINGTON DC LEGISLATIVE REPRESENTATION	CASSIDY & ASSOCIATES, INC	\$216,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G15668	80	REPLACE UP TO 8 CNG FUELTANKS ON SCHOOL BUSES	COLTON JOINT UNIFIED SCHOOL DISTRICT	\$160,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G15669	80	LOWER EMISSION SCHOOL BUS TANK RETROFIT PROGRAM	WALNUT VALLEY UNIFIED SCHOOL DISTRICT	\$20,000.00	
44	MSRC	ML14022	23	PURCHASE 10 HEAVY-DUTY NATURAL GAS VEHICLES	COUNTY OF LOS ANGELES	\$300,000.00	
44	MSRC	ML14023	23	UPGRADE VEHICLE MAINTENANCE FACILITY IN WESTCHESTER	COUNTY OF LOS ANGELES	\$230,000.00	
44	MSRC	ML14024	23	UPGRADE MAINTENANCE FACILITY IN BALDWIN PARK	COUNTY OF LOS ANGELES	\$230,000.00	
44	MSRC	ML14025	23	INSTALL AND MAINTAIN A NEW CNG FUELING STATION IN MALIBU	COUNTY OF LOS ANGELES	\$300,000.00	
44	MSRC	ML14026	23	INSTALL AND MAINTAIN CNG FUELING STATION IN CASTAIC	COUNTY OF LOS ANGELES	\$300,000.00	
44	MSRC	ML14027	23	INSTALL AND MAINTAIN CNG FUELING STATION IN DOWNEY	COUNTY OF LOS ANGELES	\$500,000.00	
44	MSRC	ML14067	23	PURCHASE 2 HEAVY-DUTY CNG VEHICLES	CITY OF DUARTE	\$60,000.00	
44	MSRC	ML14093	23	SAN GABRIEL BIKE TRAIL UNDERPASS IMPROVEMENTS	COUNTY OF LOS ANGELES	\$150,000.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	MSRC	ML16007	23	PURCHASE 7 HEAVY-DUTY CNG VEHICLES AND INSTALL EV CHARGING STATIONS	CITY OF CULVER CITY	\$246,000.00	
44	MSRC	ML16009	23	INSTALL EV CHARGING STATIONS	CITY OF FOUNTAIN VALLEY	\$46,100.00	
44	MSRC	ML16011	23	PURCHASE 3 HEAVY-DUTY CNG VEHICLES	CITY OF CLAREMONT	\$90,000.00	
44	MSRC	ML16013	23	PURCHASE 3 HEAVY-DUTY CNG VEHICLES	CITY OF MONTEREY PARK	\$90,000.00	
44	MSRC	MS11073	23	EXPAND CNG FUELING STATION	LOS ANGELES UNIFIED SCHOOL DISTRICT	\$175,000.00	
44	MSRC	MS12083	23	INSTALL CNG STATION	BREA OLINDA UNIFIED SCHOOL DISTRICT	\$59,454.00	
44	MSRC	MS14039	23	MODIFY MAINTENANCE FACILITY IN IRVINE	WASTE MANAGEMENT COLLECTION & RECYCLING	\$75,000.00	
44	MSRC	MS14040	23	MODIFY MANAGEMENT COLLECTION AND RECYCLING	WASTE MANAGEMENT COLLECTION & RECYCLING	\$75,000.00	
44	MSRC	MS14041	23	MODIFY MAINTENANCE FACILITY AND INSTALL CNG STATION	USA WASTE OF CALIFORNIA INC	\$175,000.00	
44	MSRC	MS14076	23	INSTALL PUBLIC ACCESS CNG STATION	RIALTO UNIFIED SCHOOL DISTRICT	\$225,000.00	
44	MSRC	MS14078	23	INSTALL PUBLIC ACCESS CNG STATION	AMERICAN HONDA MOTOR COMPANY INC	\$150,000.00	
44	MSRC	MS14082	23	INSTALL PUBLIC ACCESS CNG STATION	GRAND CENTRAL RECYLING &TRANSFER STATION	\$150,000.00	
44	MSRC	MS14083	23	INSTALL AND MAINTAIN LIMITED ACCESS CNG FUELING STATION	Hacienda-la puente unified School dist	\$175,000.00	
44	MSRC	MS14087	23	IMPLEMENT SPECIAL METROLINK SERVICE TO ANGEL STADIUM	ORANGE CO TRANSPORTATION AUTHORITY	\$239,645.00	
44	MSRC	MS16002	23	IMPLEMENT EXPRESS BUS SERVICE TO ORANGE COUNTY FAIR	ORANGE CO TRANSPORTATION AUTHORITY	\$722,266.00	
					Subtotal	\$41,891,192.00	
-	etitive-Executive Officer Appr		_				
	LEGAL	C15651	01	ENVIRONMENTAL / GOVERNMENTAL LAW	BEST BEST & KRIEGER	\$5,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C16038	01	BUILDING AUTOMATION AND CONTROL PROGRAM CONSULTATION SERVICES	OPTIMAL CONTROLS, LLC	\$23,995.00	
					Subtotal	\$28,995.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
Sole	Source - Board Approved						
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14336	31	SO CAL EV INFRASTRUCTURE MOA	DEPARTMENT OF WATER & POWER	\$0.00	1
44	Science & Technology Advancement	C15609	31	INSTALLATION OF RIVERSIDE RENEWABLE HYDROGEN FUELING STATION	ITM POWER INC	\$200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15611	31	INSTALLATION OF ONTARIO RENEWABLE HYDROGEN FUELING STATION	ONTARIO CNG STATION INC.	\$200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15614	17	COMMERCIAL ELECTRIC LAWNMOWER PILOT PROGRAM WITHIN SAN BERNARDINO	MEAN GREEN PRODUCTS LLC	\$349,495.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15619	31	INSTALLATION OF CHINO RENEWABLE HYDROGEN FUELING STATION	H2 FRONITER, INC.	\$200,000.00	
44	Science & Technology Advancement	C15623	31	PILOT STUDY-OZONE AND SECONDARY ORGANIC AEROSOL (SOA) FORMATION FROM GASOLINE AND DIESEL COMPOUNDS	UNIVERSITY OF CALIFORNIA RIVERSIDE	\$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15625	31	EVALUATE SECONDARY ORGANIC AEROSOL (SOA) FORMATION POTENTIAL FROM LIGHT- DUTY GASOLINE DIRECT INJECTION (GDI) VEHICLES	UNIVERSITY OF CALIFORNIA RIVERSIDE	\$149,972.00	
44	Science & Technology Advancement	C15627	17	DEVELOPMENT AND DEMONSTRATION OF EV CHARGING EQUIPMENT INFRASTRUCTURE FOR HD DRAYAGE TRUCKS	TRANSPORTATION POWER, INC.	\$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15632	31	DEVELOP ULTRA-LOW EMISSION NATURAL GAS ENGINE FOR ON-ROAD CLASS 4 TO 7 VEHICLES	GAS TECHNOLOGY INSTITUTE	\$750,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15647	62	RETROFIT OF DPF TECHNOLOGY ON STANBY BACKUP GENERATOR AT ARMADA PLACE LIFT STATION	EASTERN MUNICIPAL WATER DISTRICT	\$59,549.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15650	17	DEVELOPMENT AND DEMONSTRATION OF WAREHOUSE ROOFTOP SOLAR SYSTEM WITH STORAGE AND EV CHARGING	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$498,908.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15661	17	HOME WEATHERIZATION PROGRAM	SOUTHERN CALIFORNIA GAS COMPANY	\$500,000.00	
44	Science & Technology Advancement	C15665	31	SOCAL EV INFRASTRUCTURE MOA	CITY OF SANTA MONICA	\$0.00	1

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15666	31	PARTICIPATE IN CAFCP FOR CALENDAR YEAR 2015 AND PROVIDE SUPPORT FOR REGIONAL COORDINATOR	BEVILACQUA-KNIGHT INC	\$137,800.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15680	31	DEVELOP A DETAILED TECHNOLOGY AND ECONOMICS BASED ROADMAP FOR THE ADOPTION OF ADVANCED COMMERCIAL VEHICLE TECHNOLOGIES TO REDUCE NITROGEN OXIDES (NOx) AND GREENHOUSE GAS (GHG) EMISSIONS THROUGH 2050 WITH EMPHASIS ON THE YEARS 2023 AND 2032.	NATIONAL RENEWABLE ENERGY LAB	\$500,000.00	
08	LEGAL	C16019	01	ELECTRONIC LEGAL SERVICES/LAW LIBRARY SERVICES	THOMSON REUTERS - WEST PYMT CTR	\$225,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16022	61	ZECT II DEMONSTRATION - DEVELOPMENT AND DEMONSTRATION OF 1 CLASS 8 CNG HYBRID ELECTRIC DRAYAGE TRUCK FOR DEMONSTRATION IN REAL WORLD DRAYAGE OPERATION FOR TWO YEARS WITH PARTICIPATING FLEET OPERATORS AT THE PORTS OF LOS ANGELES AND LONG BEACH	GAS TECHNOLOGY INSTITUTE	\$5,315,881.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16023	61	ZECT II - DEVELOPMENT OF TWO ZERO EMISSION CLASS 8 PLUG-IN FUEL CELL RANGE EXTENDED ELECTRIC TRUCKS FOR DEMONSTRATION AT THE PORTS OF LOS ANGELES AND LONG BEACH	TRANSPORTATION POWER, INC.	\$1,634,896.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16024	61	ZECT II - DEVELOPMENT AND DEMONSTRATION OF TWO CLASS 8 FUEL CELL HYBRID RANGE EXTENDED ELECTRIC DRAYAGE TRUCKS	US HYBRID CORPORATION	\$2,073,034.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16043	17	PURCHASE UP TO 400 CORDLESS ELECTRIC LAWN MOWERS FOR THE LAWN MOWER EXCHANGE EVENTS	BLACK & DECKER (US) INC	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16044	17	PURCHASE UP TO 400 N-B AND N-1 MODEL CORDLESS ELECTRIC LAWN MOWERS FOR LAWN MOWER EXCHANGE EVENTS	THE GREENSTATION	\$80,000.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16046	61,31	ZECT - DEVELOP 2 CLASS 8 PLUG-IN HYBRID ELECTRIC TRUCKS WITH ZERO EMISSION OPERATION CAPABILITY AND EXTENDED RANGE USING AN ONBOARD GENERATOR FUELED BY CNG, FOR DEMONSTRATION IN DRAYAGE SERVICE AT THE PORTS OF LOS ANGELES AND LONG BEACH.	TRANSPORTATION POWER, INC.	\$1,153,446.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16047	31,61	ZECT - DEVELOP AND DEMONSTRATE THREE CLASS 8 LNG PLUG-IN HYBRID ELECTRIC DRAYAGE TRUCKS	US HYBRID CORPORATION	\$947,896.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16055	31	CO-SPONSOR SOLAR DECATHLON-DEVELOP AND DEMO SOLAR POWERED HOUSE	UNIVERSITY OF CALIFORNIA - IRVINE	\$50,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C16073	01	PUBLICATION OF A FOUR-PAGE BROADSHEET FULL-COLOR NEWSPAPER WRAP	LOS ANGELES SENTINEL, INC	\$50,000.00	
20	MEDIA OFFICE	C16190	46	GOOGLE AD CAMPAIGN	GOOGLE, INC	\$800,000.00	
44	MSRC	ML12090	23	INSTALL ONE LEVEL III TYPE PUBLICLY ACCESSIBLE EV CHARGING STATION	CITY OF PALM SPRINGS	\$21,163.00	
44	MSRC	MS16003	23	IMPLEMENT SPECIAL OLYMPICS LOW EMISSION TRANSPORTATION	2015 SPECIAL OLYMPICS WORLD SUMMER GAMES	\$380,304.00	
44	MSRC	MS16004	23	HOST AND MAINTAIN MSRC WEBSITE	MINERAL, LLC	\$25,890.00	
					Subtotal	\$16,558,234.00	
Sole	Source - Executive Officer App	oroved					
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15641	01	LEASE OF HYUNDAI FUEL CELL VEHICLE	HARDIN HYUNDAI	\$22,861.60	
08	LEGAL	C16020	01	ELECTRONIC LEGAL SERVICES/LAW LIBRARY	LEXIS-NEXIS	\$27,999.99	
16	ADMINISTRATIVE & HUMAN RESOURCES	C16026	01	COBRA ADMINISTRATION	P & A ADMINISTRATIVE & HUMAN RESOURCES INC	\$18,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C16028	01	REVIEW OF NON-MARKET BENEFITS IN THE REGIONAL ECONOMIC MODEL	MICHAEL L. LAHR	\$10,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C16033	01	EVALUATION OF POTENTIAL HEALTH EFFECTS FROM AIR POLLUTION	JOHN R FROINES	\$20,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C16034	01	EVALUATE POTENTIAL HEALTH EFFECTS FROM AIR POLLUTION	MICHAEL T. KLEINMAN	\$20,000.00	

DEP ID	T DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
26	PLANNING RULE DEV & AREA SOURCES	C16035	01	ASSISTANCE WITH CEQA SERVICES FOR SCAQMD PERMITS FOR HIXSON METAL FINISHING	ENVIRONMENTAL AUDIT INC	\$30,780.00	
01	ADMINISTRATIVE & HUMAN RESOURCES	C16036	01	EMPLOYMENT RELATIONS TRAINING	LIEBERT CASSIDY WHITMORE	\$3,720.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C16037	01	INSURANCE BROKERAGE SERVICES	ALLIANT INSURANCE SERVICES INC	\$0.00	1
08	LEGAL	C16042	01	PROVIDE LEGAL SERVICES IN CONNECTION WITH DEVELOPING AND IMPLEMENTING LEGAL STRATEGY FOR RECLAIM RULE	ARNOLD & PORTER LLP	\$75,000.00	
20	MEDIA OFFICE	C16048	01	GOOGLE ADVERTISING CAMPAIGN	GROUP 1 PRODUCTIONS	\$15,000.00	
20	MEDIA OFFICE	C16049	01	PRODUCTION OF GOOGLE AD TRAILER - THE RIGHT TO BREATHE	CINEMA VERTIGE, LLC	\$3,700.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C16050	01	PLANNING, FACILITATING, AND STAFFING THE CESAR CHAVEZ DAY EVENT IN MARCH 2016	LEE ANDREWS GROUP INC	\$75,000.00	
17	CLERK OF THE BOARDS	C16052	01	LEGAL REPRESENTATION FOR THE HEARING BOARD	ALVAREZ-GLASMAN & COLVIN	\$45,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C16053	01	TECHNICAL ADVISOR TO THE COMMUNITY REPRESENTATIVES ON EXIDE TECHNOLOGIES ADVISORY GROUP	L. EVERETT & ASSOCIATES, LLC	\$50,000.00	
08	LEGAL	C16063	01	SPECIALIZED LEGAL SERVICES	HOGAN LOVELLS US LLP	\$75,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C16064	01	SUBSURFACE GEOTECHNICAL INVESTIGATION	COTTON, SHIRES AND ASSOCIATES, INC.	\$29,900.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16151	01	2015 MIRAI FUEL CELL VEHICLE	TOYOTA MOTOR CREDIT CORPORATION	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16171	01	3 YEAR LEASE OF 2015 MIRAI FUEL CELL VEHICLE	LONGO TOYOTA - A PENSKE COMPANY	\$24,556.57	
					Subtotal	\$546,518.16	

II. OTHER

Boar	d Assistant						
Boar	Board Administrative Committee Reviewed/Executive Officer Approved						
02	GOVERNING BOARD	C16000	01	BOARD ASSISTANT SERVICES FOR DR. JOSEPH LYOU	MARK ABRAMOWITZ	\$30,829.74	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
02	GOVERNING BOARD	C16001	01	BOARD ASSISTANT SERVICES FOR SHAWN NELSON	INFRASTRUCTURE GROUP, INC	\$38,750.00	
02	GOVERNING BOARD	C16002	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	FRANK CARDENAS AND ASSOCIATES	\$7,912.78	
02	GOVERNING BOARD	C16003	01	BOARD ASSISTANT SERVICES FOR JOHN BENOIT	BUFORD A CRITES	\$38,750.00	
02	GOVERNING BOARD	C16004	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	JAMES GLEN DUNCAN	\$8,632.26	
02	GOVERNING BOARD	C16005	01	BOARD ASSISTANT SERVICES FOR DENNIS YATES	EARL C ELROD	\$58,125.00	
02	GOVERNING BOARD	C16006	01	BOARD ASSISTANT SERVICES FOR JOE BUSCAINO	JACOB LEE HAIK	\$38,750.00	
02	GOVERNING BOARD	C16007	01	BOARD ASSISTANT SERVICES FOR DR. CLARK PARKER	MARIA INIGUEZ	\$38,750.00	
02	GOVERNING BOARD	C16008	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	RONALD KETCHAM	\$11,307.39	
02	GOVERNING BOARD	C16009	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	CHUNG S. LIU	\$19,375.00	
02	GOVERNING BOARD	C16010	01	BOARD ASSISTANT SERVICES FOR MICHAEL ANTONOVICH	DEBRA S MENDELSOHN	\$38,750.00	
02	GOVERNING BOARD	C16011	01	BOARD ASSISTANT SERVICES FOR DR. JOSEPH LYOU	NICOLE NISHIMURA	\$7,920.16	
02	GOVERNING BOARD	C16012	01	BOARD ASSISTANT SERVICES FOR DR. WILLIAM BURKE	P & L CONSULTING, LLC	\$116,250.00	
02	GOVERNING BOARD	C16013	01	BOARD ASSISTANT SERVICES FOR JUDY MITCHELL	MARISA KRISTINE PEREZ	\$58,125.00	
02	GOVERNING BOARD	C16014	01	BOARD ASSISTANT SERVICES FOR MIGUEL PULIDO	LUIS A PULIDO	\$38,750.00	
02	GOVERNING BOARD	C16015	01	BOARD ASSISTANT SERVICES FOR JANICE RUTHERFORD	COUNTY OF SAN BERNARDINO	\$38,750.00	
02	GOVERNING BOARD	C16016	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	SHO TAY	\$4,056.56	
02	GOVERNING BOARD	C16017	01	BOARD ASSISTANT SERVICES FOR DENNIS YATES	ROBERT ULLOA	\$58,125.00	
02	GOVERNING BOARD	C16018	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS	\$38,750.00	

DEPT D ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE	
02 G	OVERNING BOARD	C16021	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	DAVID CZAMANSKE	\$6,841.00		
02 G	OVERNING BOARD	C16061	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	CITY OF WILDOMAR	\$20,000.00		
					Subtotal	\$717,499.89		
Other -	Executive Officer Approved							
-	DMINISTRATIVE & HUMAN	C15643	01	CARSON AIR MONITORING STATION	VENTURA TRANSFER COMPANY	\$8,800.00		
	DMINISTRATIVE & HUMAN ESOURCES	C15646	01	LBCC AIR MONITORING STATION	LONG BEACH COMMUNITY COLLEGE DISTRICT	\$900.00		
					Subtotal	\$9,700.00		
III. SPONSORSHIPS Sponsorship -Executive Officer Approved								

44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16029	01	THE WOMEN IN GREEN FORUM SPONSORSHIP	THREE SQUARES INC.	\$8,000.00
35	LEGISLATIVE & PUBLIC AFFAIRS	C16032	01	HEALTHY FONTANA LET'S MOVE ON THE TRAIL SPONSORSHIP	CITY OF FONTANA	\$1,000.00
35	LEGISLATIVE & PUBLIC AFFAIRS	C16062	01	10TH ANNUAL TASTE OF SOUL 2015 FAMILY FESTIVAL ASSOCIATE SPONSORSHIP	LOS ANGELES SENTINEL, INC	\$50,000.00
35	LEGISLATIVE & PUBLIC AFFAIRS	C16070	01	LUNG FORCE WALK SPONSORSHIP	AMERICAN LUNG ASSOCIATION IN CALIFORNIA	\$7,500.00

Subtotal \$66,500.00

IV. MODIFICATIONS

Boar	Board Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10046	31	DEVELOPMENT AND DEMONSTRATION OF RENEWABLE HYDROGEN ENERGY AND FUELING STATION	AIR PRODUCTS & CHEMICALS INC	\$75,000.00		
08	LEGAL	C11594	01	LEGAL REPRESENTATION	PERKINS COIE LLP	\$45,000.00		

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
08	LEGAL	C12075	01	ENVIRONMENTAL LAW	WOODRUFF SPRADLIN & SMART	\$25,000.00	
08	LEGAL	C12075	01	ENVIRONMENTAL LAW	WOODRUFF SPRADLIN & SMART	\$100,000.00	
08	LEGAL	C12128	01	EMPLOYMENT & LABOR LAW	FISHER & PHILLIPS, LLP	\$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12451	81	REPLACE 7 DIESEL SOLID WASTE COLLECTION VEHICLES WITH NATURAL GAS VEHICLES	USA WASTE OF CALIFORNIA INC	\$100,000.00	
08	LEGAL	C12702	01	LEGAL ADVICE FOR LAWSUITS AND ADMINISTRATIVE PROCEEDINGS	SHUTE MIHALY & WEINBERGER LLP	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12882	81	REPLACE 5 DIESEL SOLID WASTE COLLECTION VEHICLES WITH NEW NATURAL GAS VEHICLES	WASTE MANAGEMENT COLLECTION & RECYCLING	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12894	81	REPLACE 3 DIESEL SOLID WASTE COLLECTION VEHICLES WITH NATURAL GAS VEHICLES	WARE DISPOSAL COMPANY, INC	\$75,000.00	
44	Science & Technology Advancement	C13055	17	INSTALL AND MAINTAIN AIR FILTRATION SYSTEMS IN SAN BERNARDINO AND BOYLE HEIGHTS SCHOOLS	IQAIR NORTH AMERICA, INC.	\$435,632.00	
08	LEGAL	C13060	01	LITIGATION COUNSEL	PAUL HASTINGS LLP	\$100,000.00	
08	LEGAL	C14191	01	PROVIDE LEGAL SERVICES CONCERNING EXIDE BANKRUPTCY PROCEEDINGS	KLEE, TUCHIN. BOGDANOFF & STERN LLP	\$350,000.00	
50	ENGINEERING AND COMPLIANCE	C15279	01	EXIDE MITIGATION PLAN FOR CONSTRUCTION OF RISK REDUCTION MEASURES	TETRA TECH BAS	\$750,000.00	
50	ENGINEERING AND COMPLIANCE	C15279	01	EXIDE MITIGATION PLAN FOR CONSTRUCTION OF RISK REDUCTION MEASURES	TETRA TECH BAS	\$680,000.00	
20	MEDIA OFFICE	C15345	36	MEDIA, ADVERTISING AND OUTREACH CAMPAIGN FOR "CHECK BEFORE YOU BURN" PROGRAM	QUIJOTE CORP DBA SENSIS	\$493,000.00	
27	INFORMATION MANAGEMENT	C15446	01	SHORT- AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	SIERRA CYBERNETICS INC	\$100,000.00	
27	INFORMATION MANAGEMENT	C15468	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	VARSUN ETECHNOLOGIES GROUP, INC	\$80,000.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15576	71	SCAQMD CNG STATION MAINTENANCE AND MANAGEMENT	TRILLIUM USA COMPANY	\$75,000.00	
27	INFORMATION MANAGEMENT	C15587	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	PRELUDE SYSTEMS, INC.	\$85,000.00	
44	MSRC	MS14006	23	TECHNICAL ADVISOR SERVICES FOR THE MSRC	RAYMOND GORSKI	\$299,600.00	
					Subtotal	\$4,068,232.00	
Board	l Assistant						
Board	d Administrative Committee R	eviewed/Exe	cutive O	fficer Approved			
02	GOVERNING BOARD	C16009	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	CHUNG S. LIU	\$34,687.40	
02	GOVERNING BOARD	C16013	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	MARISA KRISTINE PEREZ	\$0.00	11
02	GOVERNING BOARD	C16011	01	BOARD ASSISTANT SERVICES FOR DR. JOSEPH LYOU	NICOLE NISHIMURA	\$4,079.77	
					Subtotal	\$38,767.17	
Exect	utive Officer Approved						
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C08063	31	DEVELOP AND DEMONSTRATION OF 20 PLUG-IN HYBRID ELECTRIC VEHICLES	QUANTUM FUEL SYSTEMS TECH WORLDWIDE INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09422	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	CARMENITA TRUCK CENTER	\$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C10001	01	STAMPRAG MEMBER SERVICES	CENTER FOR CONTINUING STUDY-CA ECONOMY	\$5,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10006	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	TEC OF CALIFORNIA	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10008	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	WESTERN TRUCK EXCHANGE	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10722	01	RE-ESTABLISH TESTING FACILITY & QUANTIFY PM EMISSION REDUCTIONS FROM CHARBROILING OPERATIONS	UNIVERSITY OF CALIFORNIA, RIVERSIDE	\$0.00	6

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11162	59	SCAQMD APPROVED DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	UNITED TRUCK CENTERS, INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11165	59	SCAQMD APPROVED PARTICIPATING RETROFIT INSTALLER IN VOUCHER INCENTIVE PROGRAM	VALLEY POWER SYSTEMS, INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11166	59	SCAQMD APPROVED PARTICIPATING RETROFIT INSTALLER IN VOUCHER INCENTIVE PROGRAM	CUMMINS CAL PACIFIC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11395	80	REPOWER 2 OFF-ROAD CONSTRUCTION EQUIPMENT	B & D EQUIPMENT RENTAL, INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11606	31	DEVELOP AND DEMONSTRATE PLUG-IN HYBRID ELECTRIC DRIVE SYSTEMS FOR MEDIUM- AND HEAVY-DUTY VEHICLES	ODYNE SYSTEMS, LLC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11615	31	DEVELOPMENT AND DEMONSTRATION OF UP TO 4 HEAVY-DUTY HYDRAULIC HYBRID VEHICLES	PARKER HANNIFIN CORPORATION	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12055	59	SCAQMD APPROVED PARTICIPATING RETROFIT INSTALLER IN VOUCHER INCENTIVE PROGRAM	RINCON TRUCK CENTER INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12155	01	TOYOTA FUEL CELL HYBRID LEASE	UNIVERSITY OF CALIFORNIA - IRVINE	\$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C12189	01	SERVICE AND MAINTENANCE FOR LEIBERT AIR CONDITIONING EQUIPMENT	KLM, INC	\$4,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C12272	01	PROVIDE ELEVATOR SERVICE AND PREVENTATIVE MAINTENANCE	THYSSENKRUPP ELEVATOR CORP	\$13,977.00	
08	LEGAL	C12702	01	LEGAL ADVICE FOR LAWSUITS AND ADMINISTRATIVE PROCEEDINGS	SHUTE MIHALY & WEINBERGER LLP	\$30,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C12840	01	AIR MONITORING STATION IN LONG BEACH	THE VILLAGES AT CABRILLO	\$10,800.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12865	31	DEVELOPMENT OF QUANTITATIVE CELLULAR ASSAYS FOR USE IN UNDERSTANTING THE CHEMICAL BASIS OF AIR POLLUTANT TOXICITY	UNIVERSITY OF CALIFORNIA- LOS ANGELES	\$0.00	4
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12885	23	PURCHASE 2 CNG WASTE COLLECTION VEHICLES USING DOT GRANT FUNDS	BURRTEC WASTE INDUSTRIES INC	\$0.00	6

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13041	01	TECHNICAL ASSISTANCE WITH EMISSION REDUCTION PROJECTS TO BE IMPLEMENTED UNDER AB 1318 MITIGATION	MELVIN D ZELDIN	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13056	27	INSTALLATION OF UP TO 2MW SOLAR PV, UP TO 2MWh OF LITHIUM BATTERY STORAGE SYSTEMS AND ELECTRIC TROLLEY	UNIVERSITY OF CALIFORNIA RIVERSIDE	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13071	59	SCAQMD APPROVED PARTICIPATING RETROFIT INSTALLER IN VOUCHER INCENTIVE PROGRAM	EXHAUST EMISSION REDUCTION SPECIALISTS	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13194	01	PROVIDE TECHNICAL ASSISTANCE WITH ALTERNATIVE FUELS, RENEWABLE ENERGY AND ELECTRIC VEHICLES	CLEAN FUEL CONNECTION INC	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13408	31	DEMONSTRATION OF BUILDING INTEGRATION OF ELECTRIC VEHICLES, PHOTOVOLTAICS, AND STATIONARY FUEL CELLS	UNIVERSITY OF CALIFORNIA - IRVINE	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13460	32	REPOWER 13 DIESEL OFF-ROAD VEHICLES	JAGUR TRACTOR	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14169	36	DEVELOPMENT AND DEMONSTRATION OF UP TO 15 PROPANE AND NATURAL GAS-FIRED RETROFIT AND METAL FIRE RINGS	EARTH'S FLAME, INC	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14172	31	AIR POLLUTION HEALTH EFFECTS - OXIDATIVE STRESS TO PARTICULATE AIR POLLUTION EXPOSURES IN ELDERLY	UNIVERSITY OF CALIFORNIA - IRVINE	\$0.00	6
08	LEGAL	C14191	01	PROVIDE LEGAL SERVICES CONCERNING EXIDE BANKRUPTCY PROCEEDINGS	KLEE, TUCHIN. BOGDANOFF & STERN LLP	\$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14199	31	SO CAL EV INFRASTRUCTURE MOA	CLEAN FUEL CONNECTION INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14202	31	SO CAL EV INFRASTRUCTURE MOA	ADOPT A CHARGER, INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14204	31	SO CAL EV INFRASTRUCTURE MOA	ASSOCIATED OF LOS ANGELES	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14218	32	REPOWER 8 OFF-ROAD VEHICLES	FINE GRADE EQUIPMENT, INC.	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14224	31	DEVELOP AND TEST RETROFIT ALL-ELECTRIC TRANSIT BUS	COMPLETE COACH WORKS	\$0.00	6

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14259	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EVANS DEDICATED SYSTEMS, INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14310	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANTHONY H. OSTERKAMP JR.	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14318	32	REPOWER OF 3 OFF-ROAD VEHICLES	RENTRAC INC	\$0.00	6
08	LEGAL	C14360	01	OFFICE OF GENERAL COUNSEL DOCUMENT MANAGEMENT SYSTEM	HARBOR LITIGATION SOLUTIONS	\$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14624	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ROCKVIEW DAIRIES, INC.	\$0.00	1
08	LEGAL	C14681	01	OFFICE OF GENERAL COUNSEL CASE MANAGEMENT SYSTEM	COURTVIEW JUSTICE SOLUTIONS, INC	\$24,630.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15039	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE E. MARTINEZ	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15326	81	PROP 1B TRUCK REPLACEMENT PROGRAM	UNITED PARCEL SERVICE, INC	\$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C15341	01	PROVIDE CEQA SUPPORT FOR TESORO REFINERY INTEGRATION PROJECT	CALENVIRO METRICS, LLC	\$16,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15389	55	CREATE HYDROGEN READINESS IN EARLY MARKETS PLAN, OUTREACH AND BEST PRACTICES, AND TRAINING	BEVILACQUA-KNIGHT INC	\$0.00	6
27	INFORMATION MANAGEMENT	C15447	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	AGREEYA SOLUTIONS, INC	\$41,840.00	
26	PLANNING RULE DEV & AREA SOURCES	C15465	36	SUPPORT DEVELOPMENT OF STUDY DESIGN ON WAREHOUSE TRIP GENERATION RATES	INSTITUTE OF TRANSPORTATION ENGINEERS	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15470	32	REPOWER 24 OFF-ROAD VEHICLES	RRM PROPERTIES, LTD	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15472	32	REPOWER 1 OFF-ROAD VEHICLE	DUSTIN SMITH EQUIPMENT, INC.	\$0.00	6
04	FINANCE	C15508	01,22	AUDIT OF AB2766 FEE REVENUE RECIPIENTS FOR FY 2011-12 & 2012-13	SIMPSON & SIMPSON, CPAs	\$0.00	6
04	FINANCE	C15508	01,22	AUDIT OF AB2766 FEE REVENUE RECIPIENTS FOR FY 2011-12 & 2012-13	SIMPSON & SIMPSON, CPAs	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15530	32	REPOWER ONE OFF-ROAD VEHICLE	EARTH TEK ENGINEERING CORP.	\$0.00	6

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15581	01	SCRAP GASOLINE LAWN MOWERS AFTER DRAINING THE FUEL SAFELY AT THE LAWN MOWER EXCHANGE SITES AND PROVIDE TRANSPORTATION FROM THE SITES	DICK'S AUTO WRECKERS	\$3,500.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15583	01	PROVIDE SUPPORT SERVICES AT THE LAWN MOWER EXCHANGE EVENTS	PARKING CONCEPTS INC	\$3,500.00	
26	PLANNING RULE DEV & AREA SOURCES	C16028	01	REVIEW OF NON-MARKET BENEFITS IN THE REGIONAL ECONOMIC MODEL	MICHAEL L. LAHR	\$0.00	6
20	MEDIA OFFICE	C16049	01	PRODUCTION OF GOOGLE AD TRAILER - THE RIGHT TO BREATHE	CINEMA VERTIGE, LLC	\$2,700.00	
44	MSRC	ML09047	23	MODIFY VEHICLE MAINTENANCE FACILITY	COUNTY OF LOS ANGELES	\$0.00	6
44	MSRC	ML11032	23	PURCHASE VEHICLE, EXPAND STATIONS, AND UPGRADE MAINTENANCE FACILITY	CITY OF GARDENA	\$0.00	11
44	MSRC	ML12018	23	EXPAND CNG STATION	CITY OF WEST COVINA	\$0.00	6
44	MSRC	ML12041	23	ELECTRIC VEHICLE CHARGING INFRASTRUCTURE	CITY OF ANAHEIM	\$0.00	6
44	MSRC	ML14050	23	YUCAIPA BICYCLE LANES	CITY OF YUCAIPA	\$0.00	6
44	MSRC	ML14068	23	INSTALL EV CHARGING STATION(S)	CITY OF SOUTH PASADENA	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	XC11538	52	INSTALL AND MAINTAIN AIR FILTRATION SYSTEMS IN WILMINGTON AREA SCHOOLS	IQAIR NORTH AMERICA, INC.	\$0.00	6
					Subtotal	\$300,947.00	
V. TE	RMINATED CONTRACTS-PART	TIAL/NO WOF	RK PERF	ORMED			
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11396	80	REPOWER 3 OFF-ROAD CONSTRUCTION EQUIPMENT	MBA GRADING & DEMOLITION, INC.	-\$311,852.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14076	32	REPOWER 4 OFF-ROAD DIESEL VEHICLES	MILLER EQUIPMENT COMPANY INC	-\$28,209.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14178	32	REPOWER 4 OFF-ROAD VEHICLES	DAN COPP CRUSHING CORPORATION	-\$63,095.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14625	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CATERER'S LEASING INC	-\$50,000.00	7
44	MSRC	ML12052	23	EXPAND CNG STATION	CITY OF WHITTIER	-\$165,000.00	7
44	MSRC	MS12031	23	PURCHASE 4 MEDIUM-HEAVY-DUTY ON-ROAD VEHICLES	FINAL ASSEMBLY INC	-\$50,000.00	7
					Subtotal	-\$668,156.00	

DEPT DEPT NAME

CONTRACT FUND DESCRIPTION

ID

NUMBER CODE

SPECIAL FUNDS

- 17 ADV. TECH, OUTREACH & EDU FUND
- 20 AIR QUALITY ASSISTANCE FUND
- 23 MSRC FUND
- 27 AIR QUALITY INVESTMENT FUND
- 31 CLEAN FUELS FUND
- 32 CARL MOYER FUND SB1107 ACCOUNT
- 33 SCHOOL BUS REPLACEMENT PROGRAM
- 34 ZERO EMISSION VEHICLE INCENTIVE PROGRAM
- 35 AES SETTLEMENT PROJECTS FUND
- 36 RULE 1309.1 PRIORITY RESERVE FUND
- 37 CARB ERC BANK FUND
- 38 LADWP SETTLEMENT PROJECTS FUND
- 39 STATE EMISSIONS MITIGATION FUND
- 40 NATURAL GAS VEHICLE PARTNERSHIP FUND
- 41 STATE BUG FUND
- 45 CBE/CBO SETTLEMENT AGREEMENT FUND
- 46 BP ARCO SETTLEMENT FUND
- 48 HEALTH EFFECTS RESEARCH FUND
- 50 DOE ARRA-PLUG-IN HYBRID ELECTRIC VEHICLES
- 51 DOE ARRA-LNG CORRIDOR EXPANSION
- 52 TRAPAC SCHOOL AIR FILTRATION
- 53 EMISSION REDUCTION AND OUTREACH FUND
- 56 HEROS II PROGRAM FUND
- 58 AB1318 MITIGATION FEES FUND
- 59 CARL MOYER VOUCHER INCENTIVE FUND
- 60 DOE PEV INFRASTRUCTURE PLANNING SPECIAL REVENUE FUND
- 61 ADVANCED TECHNOLOGY GOODS MOVEMENT FUND
- 71 CNG FUELING STATION ENTERPRISE FUND
- 80 CARL MOYER FUND AB923 ACCOUNT
- 81 PROPOSITION 1B GOODS MOVEMENT FUND
- 82 PROPOSITION 1B LOWER EMISSION SCHOOL BUS

VENDOR NAME

CONTRACT FOOT AMOUNT NOTE

FOOTNOTES

- 1 NO FIXED VALUE
- 2 RATES VARY NO FIXED VALUE
- 3 REVENUE CONTRACT NO AMOUNT SHOWN
- 4 NO COST COST REALLOCATION
- 5 CHANGED TO EMPLOYEE STATUS
- 6 NO COST- TIME EXTENSION
- 7 DE-OBLIGATION OF FUNDING
- 8 COMPETITIVE SOLICITATION ISSUED BY ANOTHER GOVERNMENT AGENCY
- 9 NO COST AIR MONITORING/LICENSE AGR
- 10 CNG VEHICLE PARTNERSHIP SELECTION
- 11 NO COST CHANGE IN TERMS
- 12 FEDERAL GOVERNMENT PASS-THRU
- 13 AT DIRECTION OF LEGISLATIVE COMMITTIEE
- 14 OPTIONAL YEAR RENEWAL/MULTI-YR CONTRACT
- 15 TRUCK GRANT PAID TO CASCADE SIERRA SOLUTIONS THROUGH LEASE-TO-OWN PROGRAM. THIS CONTRACT IS FOR OPERATION AND REPORTING ONLY.
- 16 AMOUNT UTILIZED MAY BE LESS THAN CONTRACT AMOUNT.

Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 29

REPORT: Administrative Committee

SYNOPSIS: The Administrative Committee met on Friday, February 12, 2016. The Committee discussed various issues detailed in the Committee report. The next Administrative Committee meeting is scheduled for Friday, March 11, 2016 at 10:00 a.m.

RECOMMENDED ACTION: Receive and file.

Dr. William A. Burke, Chair Administrative Committee

nv

Attendance: Attending the February 12, 2016 meeting were Committee Vice Chair Ben Benoit at SCAQMD headquarters, and Committee Chair Dr. William A. Burke and Committee Member Dr. Clark E. Parker, Sr. via videoconference. Committee Member Judith Mitchell was absent due to a calendar conflict.

ACTION/DISCUSSION ITEMS:

- 1. **Board Members' Concerns:** None to report.
- 2. **Chairman's Report of Approved Travel:** Executive Officer Barry Wallerstein reported on Councilmember Buscaino's upcoming travel to the National League of Cities, Energy, Environmental & Natural Resources Committee where air quality issues will be discussed in Washington, D.C., as well as Councilmember Mitchell's upcoming monthly CARB Board meeting in Sacramento.
- 3. **Approval of Compensation for Board Member Assistant(s)/Consultant(s):** Dr. Wallerstein reported that Councilmember Robinson has selected Matt Holder as a Board Consultant and Thomas Fuentes, Jr. as a Board Assistant. Vice Chair Benoit is adjusting the existing contracts for his current consultants, Ruthanne Taylor Berger and Dan York.

Moved by Dr. Parker; seconded by Benoit, unanimously approved.

4. **Report of Approved Out-of-Country Travel:** None to report.

5. Set Public Hearing April 1, 2016 to Receive Public Input on Executive Officer's Draft Goals and Priority Objectives for FY 2016-17:

Dr. Wallerstein reported that this is an early draft of the upcoming draft goals and priority objectives as this will be part of a Set Hearing package. With the next Board package, initial feedback will be received from the Board, and it will ultimately come back to the Board at a later date for approval. Dr. Burke inquired if this requires a motion. Dr. Wallerstein responded that it does not.

6. **Execute Contract for Elevator Service, Repairs and Preventative**

Maintenance: Assistant DEO/Human Resources Bill Johnson reported that last year staff released an RFP for maintenance and repair of SCAQMD's seven elevators and staff is following the proposal process by making recommendations to award a three-year contract to ThyssenKrupp Elevator Service. Although ThyssenKrupp Elevator Service is not the lowest cost proposer, it is believed based on the substantial by greater experience of this firm as opposed to the three other proposers, that the greater experience justifies the higher cost. Dr. Wallerstein reported that Counsel has advised that committees must have a roll call vote for meetings via videoconference for the items for committee review. General Counsel Kurt Wiese further added that is a new requirement set by the state. Dr. Wallerstein inquired if a motion for Agenda items 3 and 6 can be combined. Mr. Wiese indicated yes. Councilmember Benoit made a motion to approve both items concurrently.

Moved by Parker; seconded by Benoit; unanimously approved.

Ayes:	Benoit, Dr. Parker, Dr. Burke
Noes:	None
Absent:	Mitchell

7. **Approve Position Reclassification:** Mr. Johnson reported that staff is requesting Board approval for a position reclassification as a written request was received by the Teamster's Union in which a Computer Operator was performing at a higher level of duties. Human Resources' staff has evaluated the request and has recommended that the position be reclassified to an Assistant Telecommunication Technician position. Included in the Board letter is that the matter is subject to an Administrative Grievance filed by the Teamster's Union. In addition, a third-party consultant, Koff & Associates, will conduct a number of classification studies within the Information Management department to ensure that the critical functions of these positions are accurately identified. Councilmember Benoit inquired whether the position subject to the reclassification request would be included in the classification studies to be conducted. Mr. Johnson affirmed that the position would be included.

Moved by Benoit; seconded by Parker; unanimously approved.

Ayes:	Benoit, Dr. Parker, Dr. Burke
Noes:	None
Absent:	Mitchell

Amend Contract for Document and Case Management System for 8. SCAQMD's Legal Department: Mr. Wiese reported that this item is to request an increase in funding for an Information Management project for the Legal Department. The cost of the original contract was \$238,130; this is to request an increase in funding for an additional \$34,500 to complete the project. The additional money will be used for two tasks. The first task is to enable the preparation of the case settlement report that goes to the monthly Board meeting. The second task is to complete the development of script that will enable staff to access information from the SCAQMD's database onto their desktops. The SCAQMD has an in-house database that is several decades old so the project has become more complicated, requiring additional money to proceed with that task as well. Councilmember Benoit inquired about the second task, was the script to be done in-house or was it part of the original contract, or did it result into a larger project? Mr. Wiese responded the second task was part of the original contract, but the scope and dollar amount turned out to be more than what was originally allocated. Councilmember Benoit commented he understood it to be a new system related with a really old system, which normally does not work well. Councilmember Benoit inquired when these reports are created will they come to the Board in a .PDF format rather than a scanned document as the scanned documents are difficult to read? Mr. Wiese responded that there will now be the ability to create the documents in the .PDF format.

Moved by Benoit; seconded by Parker; unanimously approved.

Ayes:	Benoit, Dr. Parker, Dr. Burke
Noes:	None
Absent:	Mitchell

9. **Transfer and Appropriate Funds and Issue Purchase Order for Field Monitoring Equipment:** Deputy Executive Officer/Engineering and Compliance Mohsen Nazemi reported that this item is to request approval of the purchase of an infrared camera for the use of field compliance activities. Infrared cameras have been proven to be a very useful tool to conduct inspections from fugitive leaks at

refineries, landfills and most recently, at the Aliso Canyon natural gas leak. The SCAQMD has been using infrared technology for the past 10 years. The SCAQMD had obtained a camera in 2006 was under terms of a settlement agreement with Shell Oil products. The agreement was a 10-year lease agreement and will expire this year. The new infrared camera would be a more compact, portable unit, with an integrated recording system that requires much less maintenance than the existing unit. The purchase price of the camera is \$150,000 and includes training for 15 staff members by the supplier. Dr. Parker inquired which hydrocarbons are measured? Mr. Nazemi responded that the camera is capable of measuring C4 through C10 hydrocarbons, including methane, which is not an ozone-forming or reactive hydrocarbon. The camera is a qualitative piece of equipment, but the camera doesn't actually measure the PPM of the release or mass emissions. One of the advantages is that the camera can first identify where a leak is and then the use of portable analyzers, TVAs or OVAs, will measure the PPM. Dr. Parker inquired if the current camera is being used at the Porter Ranch facility? Mr. Nazemi responded yes. It was also noted that the older unit is much heavier and difficult to carry around; the recording device is a separate piece as the new camera is integrated, it has a telephoto lens and is much easier to use.

Councilmember Benoit commented that the new camera appears to be a very expensive handicam. Dr. Burke commented that he will be voting against the purchase of a new camera since he is unsure if the leased camera currently in SCAQMD possession is still effective, and if the SCAQMD is spending \$150,000 for something that appears to be something that is easier to carry. Dr. Parker inquired will the camera be purchased or under a lease? Mr. Nazemi responded the SCAQMD would own the new camera. Mr. Nazemi further added, it's not just the weight of the camera, the new camera is also much more accurate to low levels of emissions and it has its own integrated recording device. Dr. Burke inquired why is the SCAQMD buying the camera rather than leasing? Mr. Nazemi responded that he looked at the lease option, but it was not cost-effective since the monthly payments within a couple of years would have exceeded the cost of the camera. Dr. Burke commented it was hard for him to believe that was the case. Councilmember Benoit inquired what is the model number of the existing leased camera? Mr. Nazemi responded that the existing model number wasn't readily available, but would look into it. Mr. Nazemi indicated the new camera model number is GF 320. Mr. Nazemi further added that the California Department of Gas and Geothermal Resources is also considering to purchase the GF 320 camera as well. Dr. Wallerstein recommended that the lease price, the purchase price and the model number of the current camera in its upgraded form be included within the Board letter. Dr. Wallerstein further added that it would be beneficial to the SCAQMD to own more than one GF 320 camera due to its many technological advantages. The existing camera was instrumental in discovering some of the leaks at Allenco. At service stations, vapors billowing out are visible when the

vapor control nozzles aren't working. With the number of sources within SCAQMD's jurisdiction, any piece of equipment can malfunction and need repair; therefore, Dr. Wallerstein is recommending to acquire more than one camera, with the recognition that the camera is a very expensive piece of equipment. Councilmember Benoit inquired as part of the training, can the trainer provide a demonstration of the camera at the next Board meeting? Mr. Nazemi responded the vendor will be contacted to check availability for an onsite demonstration. Councilmember Benoit inquired if an onsite demonstration would aid Dr. Burke in making a decision about the camera purchase. Dr. Burke responded that he has no problems regarding the effectiveness of the camera and the need for the camera, but there is a fiduciary responsibility to get the best possible deal. Councilmember Benoit commented if there are multiple cameras being purchased, then a discount should be provided. Dr. Burke inquired where do the funds come from to purchase the camera? Dr. Wallerstein responded in this case, the funds are coming from an AES settlement account. Dr. Burke commented that it's a good use of the penalty money. Councilmember Benoit added that a demonstration wasn't necessary after all. Upon further discussion of the purchase of the new camera, Dr. Burke has decided to change his vote to yes.

Moved by Benoit; seconded by Parker; unanimously approved.

Ayes:	Benoit, Dr. Parker, Dr. Burke
Noes:	None
Absent:	Mitchell

10. **Recommend to Appoint Member to SCAQMD Environmental Justice Advisory Group:** Deputy Executive Officer/Legislative and Public Affairs Lisha Smith reported this item is to approve the recommendation to appoint Mr. Myron Hale to serve on the Environmental Justice Advisory Group. Mr. Hale brings a valuable combination of skills and expertise; he has a Master's Degree in City/Urban Planning from Harvard with a strong financial background and air quality experience. Vacancies exist in the advisory group to facilitate Mr. Hale's appointment.

Moved by Burke; seconded by Parker; unanimously approved.

Ayes:	Benoit, Dr. Parker, Dr. Burke
Noes:	None
Absent:	Mitchell

- 11. Local Government & Small Business Assistance Advisory Group Minutes for the December 11, 2015 Meeting: Attached for information only are the minutes for the December 11, 2015 meeting of the Local Government & Small Business Assistance Advisory Group.
- 12. Environmental Justice Advisory Group Minutes for the November 12, 2015 Special Meeting: Attached for information only are the minutes for the November 12, 2015 special meeting of the Environmental Justice Advisory Group.
- 13. Review March 4, 2016 Governing Board Agenda: None.
- 14. **Other Business:** None.
- 15. **Public Comment:** None.

Meeting adjourned at 10:25 a.m.

Attachments

- 1. Local Government & Small Business Assistance Advisory Group Minutes for the December 11, 2015 Meeting
- 2. Environmental Justice Advisory Group Minutes for the November 12, 2015 Special Meeting

ATTACHMENT 1

South Coast Air Quality Management District 21865 Copley Drive, Diamond Bar, CA 91765-4178 (909) 396-2000 • www.aqmd.gov

LOCAL GOVERNMENT & SMALL BUSINESS ASSISTANCE ADVISORY GROUP FRIDAY, DECEMBER 11, 2015 MEETING MINUTES

MEMBERS PRESENT:

Dennis Yates, Mayor, City of Chino and LGSBA Chairman Ben Benoit, Mayor, City of Wildomar and LGSBA Vice Chairman Felipe Aguirre Paul Avila, P.B.A. & Associates Geoffrey Blake, Metal Finishers of Southern California/All Metals Todd Campbell, Clean Energy Maria Elena Kennedy, Kennedy Communications Rita Loof, RadTech International David Rothbart, Los Angeles County Sanitation District

MEMBERS ABSENT:

Lupe Ramos Watson, Councilmember, City of Indio

OTHERS PRESENT:

Earl Elrod, Board Member Assistant (*Yates*) Dave Czamanske, Board Member Assistant (Cacciotti)

SCAQMD STAFF:

Derrick J. Alatorre, Asst. Deputy Executive Officer/Public Advisor Nancy Feldman, Principal Deputy District Counsel Lori Langrell, Secretary Lisha B. Smith, Deputy Executive Officer Paul Wright, Audio Visual Specialist

<u>Agenda Item #1 - Call to Order/Opening Remarks</u> Mayor Dennis Yates called the meeting to order at 12:02 p.m.

Agenda Item #2 – Approval of November 13, 2015 Meeting Minutes/Review of Follow-Up/Action

Items

Chair Yates called for approval of the November 13, 2015 meeting minutes. The Minutes were approved unanimously.

Agenda Item #3 – Review of Follow-Up/Action Items

Mr. Derrick Alatorre advised there were no action items arising out of the November 13, 2015 meeting.

<u>Agenda Item #4 – Local Government & Small Business Assistance Advisory Group 2015</u> <u>Accomplishments/2016 Goals & Objectives</u>

Mr. Alatorre provided an overview of 2015 accomplishments, and highlighted a few of the topics discussed during the year. Mr. Alatorre also indicated that ten items were presented as goals for the group, and invited suggestions from the Advisory Group members for further items to discuss.

Agenda Item #5 –Monthly Report on Small Business Assistance Activities

No comments.

Agenda Item #6 - Other Business

No comments.

Agenda Item #7 - Public Comment

Governing Board Chairman Dr. William Burke asked to address the Advisory Group, and to make some remarks about LGSBA Chair Dennis Yates as this meeting would be his last, and reflecting on his service as Chair of the LGSBA Advisory Group. Dr. Burke invited further comments, to which Governing Board Member Dr. Clark Parker, Governing Board Member/LGSBA Vice Chair Ben Benoit, Derrick Alatorre and Todd Campbell provided reflection and remarks as well.

Adjournment

The meeting adjourned at 12:26 p.m.

ATTACHMENT 2



South Coast 21865 Copley Drive, Diamond Bar, CA 91765-4178 (909) 396-2000 • www.aqmd.gov

SPECIAL MEETING OF THE ENVIRONMENTAL JUSTICE ADVISORY GROUP FRIDAY, NOVEMBER 12, 2015 MEETING MINUTES

MEMBERS PRESENT:

Dr. Joseph Lyou, AQMD Governing Board, EJAG Chairman Angelo Logan, Urban & Environmental Policy Institute (UEPI) - Occidental College Daniel Morales, National Alliance for Human Rights Dr. Afif El-Hasan, American Lung Association Evelyn Knight, Long Beach Economic Development Commission Larry Beeson, Loma Linda University, School of Public Health Mary Figueroa, Riverside Community College Paul Choe, Korean Drycleaners & Laundry Association Rafael Yanez, Member of the Public Rhetta Alexander, San Fernando Valley Interfaith Council

MEMBERS ABSENT:

Alycia Enciso, Small Business Owner, San Bernardino Andrea Hricko, Southern California Environmental Health Services Center Arnold Butler, Inglewood Unified School District Board Brenda Threatt, First African Methodist Episcopal (AME) Church Judy Bergstresser, Member of the Public Lizette Navarrete, University of California, Riverside Maria Elena Kennedy, Quail Valley Task Force Micah, Ali, Compton Unified School District Msgr. John Moretta, Resurrection Church Pastor Raymond Turner Pat Kennedy, Greater Long Beach Interfaith Community Organization Rudy Gutierrez, Community Representati8ve, Coachella Valley Suzanne Bilodeau, Knott's Berry Farm William Nelson, OC Signature Properties Woodie Rucker-Hughes, NAACP- Riverside Branch

OTHERS PRESENT

Sue Gornich

SCAQMD STAFF

Derrick Alatorre, Assistant DEO Daniel Wong, Senior Office Assistant Daniela Arellano, Senior Public Information Specialist Jeanette Short, Senior Administrative Secretary Jennifer De La Loza, Secretary Jill Whynot, Assistant DEO Lisa Tanaka, Community Relations Manager Marc Carrel, Program Supervisor Nicholas Sanchez, Sr. Deputy District Counsel

Agenda Item #1: Call to Order/Opening Remarks

Chair Dr. Joseph Lyou called the meeting to order at 12:10 pm.

Chair Lyou indicated the NOx Reclaim issue is a high priority. He also congratulated Dr. Afif El-Hasan for receiving a Clean Air Award from the SCAQMD.

Agenda Item #2: Approval of April 24, 2015 Meeting Minutes

Mr. Derrick Alatorre indicated Sue Gornich's name was misspelled in the minutes.

Action Item: Correct the spelling on Sue Gornich's name.

Chair Lyou called for the approval of the minutes. The April 24, 2015 meeting minutes were approved.

Agenda Item #3: Review of Follow-Up/Action Items

Mr. Derrick Alatorre reviewed the action items from the April 24, 2015 meeting.

- 1. Chair Lyou requested that a copy of Dr. Lawrence Beeson's report regarding the respiratory health of children living in San Bernardino, be distributed to all EJAG members.
 - a. The report was distributed to EJAG members
- 2. Chair Lyou requested a tour of the SCAQMD facility for the January 29, 2016, EJAG Meeting.
 - a. A tour of the lab is agendized for the January 29, 2016 EJAG Meeting
- Ms. Rhetta Alexander requested more information on how the Trans-Pacific Partnership would affect SCAQMD rules and regulations such as the NOx program.
 a. Item Pending

Agenda Item #4: Member Updates

Mr. Daniel Morales provided information on efforts in the City of Colton related to a concrete facility which is near an elementary school.

Mr. Angelo Logan reported foul odors emanating from the sewers in the East Los Angeles area, particularly along the 110 Freeway near the 7th Street Bridge. Mr. Logan also reported that the City of Commerce has implemented a green zones policy that addresses ways to alleviate toxic

emissions and reduce exposure for local residents, while increasing local green jobs and boosting the economy. Mr. Logan further stated there is a foul odor in the Long Beach area which he believes might be natural gas.

Ms. Evelyn Knight will provide an update at the next meeting, regarding the Southern California International Gateway Project (SCIG).

Ms. Mary Figueroa inquired about how to best identify all the warehouses located within the South Coast Air Basin. Chair Lyou advised Ms. Figueroa to look at the Governing Board Agendas over the past two years, to determine which companies presented warehouse proposals to SCAQMD, as part of the CEQA process. Mr. Angelo Logan indicated Cambridge Systematics conducted a warehousing study that might be relevant to the group.

Action Item: Chair Lyou requested that SCAQMD staff find the Cambridge Systematics Study and share it with the group.

Mr. Rafael Yanez reported he continually receives complaints on two issues: 1) Foul odors near the four level interchange in Downtown Los Angeles and 2) Foul odors at the corner of Fairfax Ave. and 6th Street in Los Angeles. Underground oil wells are causing the odors, and not much can be done to resolve the problem.

Mr. Paul Choe reported that dry cleaners will likely achieve compliance with Rule 1421.

Dr. Afif El-Hasan indicated electronic health records are making it easier to measure health trends such as obesity and hypertension, based on zip codes. This could potentially demonstrate how changes in behavior could result in health improvements. He will share information with the EJAG group if granted permission from his employer.

There were no comments from members of the public.

Agenda Item #5: Nomination of Environmental Justice Advisory Group Member to SCAQMD Advisory Council

Mr. Derrick Alatorre indicated the 2016 Air Quality Management Plan (AQMP) process requires one EJAG member to be on the SCAQMD Advisory Council. The member commits to review and provide feedback on the health impacts addressed in the AQMP.

Dr. Afif El-Hasan was nominated and accepted as the 2016 AQMP Advisory Council without any objections nor public comment.

Agenda Item #6: 2016 Draft Goals & Objectives

Mr. Derrick Alatorre presented the 2016 Draft Goals and Objectives, as proposed during the last EJAG meeting.

Mr. Angelo Logan encouraged SCAQMD to be more involved in the preparation of SCAG's Regional Transportation Plan, as opposed to just serving as a system of checks-and-balances. He also encouraged a focused effort on oil and gas production and/or fracking that affect environmental justice communities. Mr. Logan also discussed the importance of properly categorizing the "trash-to-energy" movement as he does not feel it is a clean nor sustainable energy source. He would like to also get an update on Proposed Rule 4001 Port Backstop Measure, as well as OEHHA's findings on cancer risks.

Ms. Rhetta Alexander requested to add a presentation on clean, renewable energy.

Ms. Mary Figueroa requested high prioritization of the Salton Sea as foul smells are now impacting communities as far as Riverside. She would also like an update on the Environmental Justice Community Partnership.

Mr. Rafael Yanez suggested that items related to CO2 Emissions be prioritized.

Ms. Rhetta Alexander requested an update on the AQMP.

Chair Lyou requested that a presentation at the next meeting on the Voluntary Early Risk Reductions for AB2588 Facilities and Proposed Amendments to Rule 1402. He also requested that staff distribute the draft Air Toxics Hot Spot Guidance to the group.

Action Item: Agendize a presentation on the SCAQMD Voluntary Early Risk Reductions for AB 2588 Facilities and Proposed Amendments to Rule 1402; and, distribute the draft Air Toxics Hot Spot Draft Guidance.

Ms. Evelyn Knight requested an update on how schools can be made more aware of air quality and environmental justice outreach efforts.

Chair Lyou motioned to approve the 2016 Goals and Objectives with the suggestions from the membership. Item was adopted with all in favor and no community objections.

Agenda Item #7: Environmental Justice Community Partnership Initiative (this Agenda Item was moved to Agenda Item 3 because of presenter's time restrictions)

Mr. Marc Carrel presented on the Environmental Justice Community Partnership Initiative.

Ms. Rhetta Alexander recommended that the Partnership host an event in the San Fernando Valley.

Mr. Angelo Logan commended the Partnership, but recommended SCAQMD develop a holistic approach to address environmental justice within all initiatives and programs. He stated that these types of partnerships are built on trust and years of working together. Mr. Marc Carrel responded that the Partnership aims to build relationships with the communities, so SCAQMD has a two-way flow of communication to respond to air quality issues, and disseminate information quicker when there are air quality concerns.

Mr. Derrick Alatorre provided the example of the SCAQMD Clean Communities Plan (CCP) in which a community complained about the odors from rendering facilities. He further stated that SCAQMD's proposed Rule 415 which would reduce odors from rendering facilities was developed as a direct result of the CCP program.

Ms. Mary Figueroa applauded SCAQMD's Environmental Justice Community Partnership. She emphasized the importance of implementing such a program in the Inland Empire, as many stakeholders in that area are not well informed on how to report air quality issues.

Ms. Evelyn Knight emphasized the importance of ongoing outreach efforts that address the needs of the community.

Agenda Item #8: Public Comment Period

No public comments.

<u>Agenda Item #9: Adjournment</u> The meeting was adjourned at 2:10 pm.

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 30

REPORT: Investment Oversight Committee

SYNOPSIS:The Investment Oversight Committee met Friday, February 19,
2016 and discussed various issues detailed in the Committee report.
The next Investment Oversight Committee meeting is scheduled
for Friday, May 20, 2016 at 12:00 noon in Conference Room CC2.

RECOMMENDED ACTION: Receive and file this report.

MBO:lg

Michael Antonovich, Chair
Investment Oversight Committee

Attendance: Present at SCAQMD were Committee members Gary Burton, Richard Dixon, Dr. Joseph K. Lyou and Brent Mason. Supervisor Michael Antonovich, Councilmember Michael Cacciotti, and Supervisor Shawn Nelson attended by teleconference. Absent was Vice Chair Dr. William Burke.

Investment Committee Action Items:

<u>*Quarterly Report of Investments:*</u> The Committee reviewed the quarterly investment report that was provided to the Board. For the month of December 2015, the SCAQMD's weighted average yield on total investments of \$546,167,810 from all sources was .73%. The allocation by investment type was 84.58% in the Los Angeles County Pooled Surplus Investment Fund (PSI) and 15.42% in the State of California Local Agency Investment Fund (LAIF) and Special Purpose Investments (SPI). The one-year Treasury Bill rate as of December 31, 2015 was .65%.

Moved by Antonovich; seconded by Lyou; unanimously approved. Ayes: Antonovich, Burton, Cacciotti, Dixon, Lyou, Mason, Nelson Noes: None Absent: Burke Approval of Annual Investment Policy and Delegation of Authority to Los Angeles County Treasurer to Invest SCAQMD Funds: The Committee reviewed the Annual Investment Policy for 2016 and SCAQMD's renewal of its delegation of authority to its treasurer. The Annual Investment Policy is being updated for a new investment type allowed for in California Government Code. Specifically, California Government Code Section 53601 was amended in 2015 to allow for investments in debt obligations of certain supranational institutions, including those obligations guaranteed by the International Bank for Reconstruction and Development, the International Finance Corporation, and the Inter-American Development Bank. The Los Angeles County Treasurer amended their investment policy and the Los Angeles County Board of Supervisors adopted the amendment in 2015 to allow for these investments. Therefore, a similar SCAQMD Investment Policy revision is being recommended for 2016.

Moved by Dixon; seconded by Cacciotti; unanimously approved. Ayes: Antonovich, Burton, Cacciotti, Dixon, Lyou, Mason, Nelson Noes: None Absent: Burke

Investment Committee Discussion Item:

Financial Market Update: Sarah Meacham from PFM Asset Management provided the Committee with information on current investment markets, economic conditions, and the overall outlook. She presented market information on the increased Treasury yields, continued flattening of the yield curve, money market yield curves, Fed funds target rate outlook, and expected modest increases in yields in the next year. Economic indicators were also presented showing slowing fourth quarter economic growth, better than expected growth in the labor market, decreased unemployment rate, muted inflation, significantly decreased oil prices, and expected moderate economic growth.

Other Business: None

Public Comment: None

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BOARD MEETING DATE: March 4, 2016

AGENDA NO. 31

REPORT: Legislative Committee

SYNOPSIS:The Legislative Committee held a meeting on Friday,
February 12, 2016. The next Legislative Committee meeting is
scheduled for Friday, March 11, 2016 at 9 a.m. in Conference
Room CC8.

The Committee deliberated on agenda items for Board consideration and recommended the following actions:

Agenda Item	Recommendation
Aliso Canyon Natural Gas Leak Amendments to the Federal Energy Bill	Support
SB 886 / SB 380 ¹ (Pavley) Natural Gas Storage: Moratorium	Support and continue to work with author on details involving air quality and SCAQMD operations
SB 887 (Pavley) Natural Gas Storage Wells	Support and continue to work with author on details involving air quality and SCAQMD operations
SB 888 (Allen) Gas Corporations: Emergency Management	Support and continue to work with author on details involving air quality and SCAQMD operations
State and Federal Legislative Proposals Providing for Additional Cost Considerations in SCAQMD's Regulatory Program	Approve for staff to prepare bill language for next meeting

¹ The bill language of SB 886 (Pavley) was gutted and amended into SB 380 (Pavley).

RECOMMENDED ACTION:

Receive, file this report, and approve agenda items as specified in this letter.

Michael D. Antonovich Acting Chair Legislative Committee

LBS:GSA:PFC:jf

Attendance [Attachment 1]

The Legislative Committee met on February 12, 2016. Committee Members Michael D. Antonovich (Acting Chair), Joe Buscaino, Dr. William A. Burke, Dr. Clark E. Parker, Sr. and Janice Rutherford attended via videoconference. Committee Chair Judith Mitchell was absent.

Report on Federal Legislative Issues

Gary Hoitsma, SCAQMD's federal legislative consultant of the Carmen Group, reported that the President released his annual budget proposal for what the Administration proposes to spend in the coming year. This budget plan includes a number of provisions dealing with transportation, clean energy and environmental matters that should be of special interest to SCAQMD.

Mr. Hoitsma reported that the overall reaction to the budget proposal from the Republican leadership in the House of Representatives has been universally negative. He informed the Committee that the House Budget Committee Chairman Tom Price went so far as to break with 40 years of precedent by saying his Committee would not even invite the President's budget director to testify on the budget.

Mr. Hoitsma also gave an update on the U.S. House appropriations process. He reported that the House is moving forward on an aggressive plan to craft individual spending bills this year on an accelerated schedule. This will include budget oversight hearings which have started, followed by committee markups beginning in April and floor action soon thereafter on all 12 bills, in the hopes of getting them done by mid-June.

Mr. Hoitsma added that House Republican leaders say they will stay within the higher discretionary spending caps agreed to on a bipartisan basis at the end of last year. But right now they are fighting internally on the Republican side with a group of rank-and-file conservatives who want to restrain spending even further. Tom Dennis and Kaleb Froehlich of Cassidy & Associates, SCAQMD's federal consultants, also reported on issues relating to Washington, D.C.

Mr. Froehlich reported that the U.S. Senate continues to consider the Energy Policy Modernization Act (EPMA). The bill is comprised of five sections on energy efficiency, infrastructure, supply, accountability and conservation. The bill, which has been on the Senate floor for about two weeks, has bipartisan support and passed out of Committee by an 18-4 vote. It was expected to receive similar bipartisan support on the floor; however, there is an ongoing debate regarding an amendment to provide aid to Flint, Michigan for the water crisis. The Senate is working to find a solution on this issue, but at this time, agreement has yet to be reached.

Mr. Froehlich stated that to date, of the 338 amendments introduced, 38 amendments have been accepted to the overall package, including Amendment 3194 by Senators Boxer and Feinstein creating the Aliso Canyon Natural Gas Leak Task Force. This Amendment was adopted by a voice vote. The Senate is on a recess for Presidents' Day week and is expected to address the overall bill when they return. During this break, Congressional staff will be meeting to try and work out a compromise.

Mr. Dennis provided the Committee with an outlook for Congressional activity in 2016. He reported that since 2016 is a Presidential election year, it is widely anticipated that the legislative calendar will be brief and focus primarily on completion of various items, including: the reauthorization of the Federal Aviation Administration (FAA) and the National Defense Authorization Act (NDAA), immigration reform and sanctions against North Korea as a result of their nuclear testing and recent missile launch.

Both the House and Senate are likely to continue oversight of President Obama's Clean Energy Plan and other environmental initiatives from the U.S. EPA. There may also be a public lands package to address a number of outstanding items that have languished for several years. Finally, if the Energy bill does not pass, the Boxer/Feinstein amendment dealing with Aliso Canyon could be attached to other legislation that is moving through the Senate.

Mr. Dennis informed the Committee that the U.S. Supreme Court issued an order recently, staying U.S. EPA's Clean Power Plan (CPP). The Supreme Court's stay was unexpected and is considered a major near-term blow to the Obama Administration's climate agenda. The decision to stay the rule was on a 5-4 vote. The order reverses a January 21 decision of the U.S. Court of Appeals for the District of Columbia denying a request for a stay by Petitioners. Twenty-seven states and numerous industry groups have challenged the CPP's legality in the D.C. Circuit. Many of those petitioners sought to stay the rule until the legal proceedings are complete. The stay will remain in effect until the D.C. Circuit resolves the legal challenges to the CPP and either the Supreme Court decides not to review the D.C. Circuit's decision, or the high court issues its own opinion.

The timing of the stay is notable because states are required under U.S. EPA's rule to submit implementation plans by September 2016. With the stay in place, states will not have an obligation to submit plans to U.S. EPA or request an extension. The action by the Supreme Court is unprecedented. It is the first time that the Supreme Court has issued a stay of a circuit court case while the case is being considered by that lower

court. The result of this action is seen as potentially pushing back the implementation of the CPP by almost three years.

Mark Kadesh of Kadesh & Associates, SCAQMD's federal legislative consultant reported that the President recently released his FY 2017 budget. U.S. EPA's FY 2017 budget request of \$8.267 billion is \$127 million above the agency's enacted level for FY 2016. This includes significant funding to help states implement the CPP strategies but he noted that, as discussed, this week the Supreme Court issued a stay regarding the CPP and it is not expected that this will be resolved before the election. So the state of those funds remains unclear.

Mr. Kadesh informed the Committee that as part of the President's 21st Century Clean Transportation Plan included in the Budget, the President proposes to establish a new mandatory Fund at U.S. EPA funded by his proposed \$10/barrel tax on oil. To protect the health of the most vulnerable populations and reduce childhood exposure to harmful exhaust, U.S. EPA will provide a total of \$1.65 billion through the Fund over the course of 10 years to retrofit, replace, or repower diesel equipment. The proposed funding, which is separate from the Agency's discretionary funding request, will provide up to \$300 million in FY 2017 to renew and increase funding for the DERA Grant Program, which is set to expire in 2016.

Additionally, the President's budget has U.S. EPA working with the National Highway Transportation Safety Administration, to continue to address greenhouse gas and fuel efficiency standards for mobile sources. An additional \$1 million is included in the President's request for this work. The budget also includes a \$4.2M increase to enhance vehicle, engine and fuel compliance programs, including critical testing capabilities, to ensure compliance with emission standards.

Mr. Kadesh stated that the release of the President's proposed budget is the first step in the funding process. The next important step is the appropriations process. The Senate appropriation subcommittees are just beginning to hold the hearings which are the precursors to the bill markups this spring. It is expected that some or all of the bills will get marked up quickly and go to the Senate floor, but because of the nature of the Senate and the ability to stall legislation, it is not expected that the appropriations bills will be completed prior to the July recess and the elections. It is possible that there could be a lame duck session after the election in November that addresses these funding bills.

Finally, Senator Feinstein's staff requested and received a briefing from SCAQMD staff regarding the Aliso Canyon gas leak situation on February 11.

Update on State Legislative Issues

SCAQMD's state legislative consultant Paul Gonsalves of Joe A. Gonsalves & Son provided the Committee with an update on various key Sacramento issues.

Mr. Gonsalves shared key legislative deadlines that would be impacting the Capitol Building process and timelines:

- January 22 was the deadline to submit to Leg. Counsel
- February 19 is the last day for bills to be introduced
- March 17-28 is Spring Recess

As all bills are subject to a 30-day in-print rule before they are set to be heard by a committee, the committee hearings for most bills will not begin until late March. In the meantime, the legislators are engaging in several informational hearings. On February 22, the Assembly Transportation Committee and the Senate Transportation and Housing Committee will be holding a joint informational hearing on how the California Air Resources Board's (CARB) air quality and emission reductions programs relate to the transportation sector. Also, the Senate Environmental Quality Committee is planning an informational hearing on the oversight of the SCAQMD's Regional Clean Air Incentives Market (RECLAIM) Program.

In addition, Mr. Gonsalves highlighted two of the many recently introduced bills. AB 1550 (Gomez, D-Los Angeles) requires the Greenhouse Gas Reduction Fund Investment Plan to allocate a minimum 25% of the available funding to projects located within disadvantaged communities and a separate and additional 25% to projects that benefit low-income households. AB 1710 (Calderon, D-Whittier) builds on the Charge Ahead California Initiative and requires that CARB in coordination with other state agencies develop and implement a comprehensive program to promote advanced-technology light-duty vehicle deployment in the state and meet the goals established by the Governor and the Legislature, such as the Zero-Emission Vehicles Action Plan and the Charge Ahead California Initiative.

Mr. Gonsalves expects over 1,000 bills to be introduced - many of those will be spot bills to be developed over the 30-days in-print rule. His firm will continue to closely monitor all bills of interest to the SCAQMD and keep staff apprised.

SCAQMD's state legislative consultant Will Gonzalez of Gonzalez, Quintana, Hunter & Cruz provided the Committee with an update on various key Sacramento issues.

Mr. Gonzalez briefed the Committee on two newly introduced bills. AB 1657 (O'Donnell, D-Long Beach) creates zero-and near-zero emissions program through CARB focusing on intermodal terminals and a port energy efficiency program to be administered by the California Energy Commission. AB 1691 (Gipson, D-Carson) sets a goal for CARB to replace 10,000 vehicles in disadvantaged communities through the Enhanced Fleet Modernization Program. The new program is subject to Appropriation, but the Author's staff has had positive discussions with Budget Committee. In regards to the Greenhouse Gas Reduction Fund (GGRF) there are mounting pressures to spend the funding on a variety of programs. At stake is the funding subject to the Legislature's discretion - \$1.6 billion left over from last year and the anticipated \$2 billion in revenues in the current fiscal year. In addition to calls for the Governor to restore funds to social service programs, several other programs are close to running out of funds, and there have been numerous bills allocating GGRF funds to new programs or purposes.

The legislative session has begun with a variety of oversight informational hearings, including:

- Assembly Transportation Committee: Sustainable Freight Action Plan Hearing where Deputy Executive Officer Matt Miyasato testified on behalf of SCAQMD. Other witnesses testified on behalf of CARB, Caltrans, GoBiz, CEC, as well as the Ports of Los Angeles and Long Beach, SoCal Assoc. of Governments, truckers and shippers.
- Assembly Environmental Safety and Toxic Materials Committee: Waste Facility Closure (Exide): The committee held an oversight hearing, generally reviewing the closure and remediation plans. SCAQMD Executive Officer Barry Wallerstein testified during this hearing where community members emphasized the need for more state funding for a clean-up as well as the need to complete it quickly.

Assembly Utilities and Commerce Committee: Committee Chair Gatto held an informational hearing in the Porter Ranch community that outlined natural gas storage and usage throughout the state. Various state agencies and SoCalGas provided testimony. Mr. Gonzalez concluded his report to the Committee by noting that Senators De León, Huff, Pavley and Allen held a press conference at the entrance to the Aliso Canyon Natural Gas Storage Facility to announce their legislative package in response to the massive methane leak there. (Specific bills are presented by staff later during this Committee meeting.)

Report on the Aliso Canyon Natural Gas Leak Amendments to the Federal Energy Bill [Attachment 2]

Marc Carrel, Program Supervisor, reported on the federal legislative amendment (Amendment No. 3194) to the bipartisan energy bill that was offered by California Senators Barbara Boxer and Dianne Feinstein to address the Aliso Canyon natural gas leak. The energy bill is currently being considered on the Senate floor. Amendment No. 3194 directs Energy Secretary Ernest Moniz to lead a federal task force which would undertake a broad federal review of the cause of and the response to the natural gas leak at the SoCalGas Aliso Canyon Natural Gas Storage Facility in Porter Ranch and make recommendations to prevent or better respond to future similar incidents. The amendment was approved by voice vote of the U.S. Senate and adopted into the bill on February 2, 2016.

Staff Recommended Position/Action: Since the amendment was approved (though the bill is stalled in the Senate), staff recommends that the Legislative Committee on behalf of the SCAQMD Board send letters to Senators Boxer and Feinstein:

- (1) Thanking them for putting forward legislative language addressing this issue;
- (2) Expressing the District's support of this legislative amendment language;
- (3) Requesting that the amendment be included in other relevant bills should the energy bill not pass;
- (4) Offering to provide testimony to the task force as needed; and
- (5) Offering our staff as a resource to the Secretary and the task force as they address this issue.

The recommendation also includes sending letters to the entire California delegation, seeking their support of the Amendment.

Chair Antonovich inquired as to whether SCAQMD representatives have reached out to U.S. House Majority Leader Kevin McCarthy regarding this issue. Mr. Carrel responded in the negative but stated that a letter would be sent to his office requesting his support for the amendment. Chair Antonovich requested that SCAQMD representatives make a personal visit to Majority Leader McCarthy's office regarding this issue. Dr. Barry Wallerstein, Executive Officer, stated that this request would be incorporated into the staff recommendations on this item.

Moved by Buscaino; seconded by Parker; passed by a 4-0 vote, with 1 abstention. Ayes: Antonovich, Burke, Buscaino, Parker Noes: None Abstention: Rutherford* Absent: Mitchell

*Due to technical difficulties with the VT location site the Committee member was unable to hear the complete presentation.

Recommend Position on Porter Ranch/Aliso Canyon Related State Bills [Attachment 3]

Lisha Smith, Deputy Executive Officer presented on the following two bills:

SB 886 (Pavley) Natural Gas Storage: Moratorium

SB 886 requires a moratorium on injections of natural gas into any wells located at the Aliso Canyon Natural Gas Storage Facility until an extensive well audit has been performed. It also requires the CPUC to evaluate the possible minimization or elimination of the facility.

Staff recommended a position of SUPPORT AND CONTINUE TO WORK WITH AUTHOR ON DETAILS INVOLVING AIR QUALITY.

Moved by Buscaino; seconded by Antonovich; passed by a 4-0 vote, with 1 abstention. Ayes: Antonovich, Burke, Buscaino, Parker Noes: None Abstention: Rutherford* Absent: Mitchell

*Due to technical difficulties with the VT location site the Committee member was unable to hear the complete presentation.

[PLEASE NOTE: The bill language of SB 886 (Pavley) was gutted and amended into SB 380 (Pavley) which was already further along the bicameral legislative process. SB 380 (Pavley) was heard in the Assembly Utilities and Commerce Committee on February 22, 2016 at which time Deputy Executive Officer Lisha B. Smith testified in support on behalf of SCAQMD.]

SB 887 (Pavley) Natural Gas Storage Wells

To prevent incidents such as the one that occurred at the Aliso Canyon Natural Gas Storage Facility and provide better public transparency in the operation of such facilities, SB 887 creates a comprehensive framework for DOGGR's oversight of natural gas storage wells.

Staff recommended a position of SUPPORT AND CONTINUE TO WORK WITH AUTHOR ON DETAILS INVOLVING AIR QUALITY.

Moved by Buscaino; seconded by Burke; unanimously approved. Ayes: Antonovich, Burke, Buscaino, Parker, Rutherford Noes: None Absent: Mitchell

Guillermo Sanchez, Sr. Public Affairs Manager reported on:

SB 888 (Allen) Gas Corporations: Emergency Management)

SB 888 designates the Office of Emergency Services as the lead agency for emergency response for leaks of natural gas from storage facilities like Aliso Canyon. It would be required to coordinate the emergency response, public health and environmental assessment, monitoring, and control of the leak among other state agencies. In addition, the bill requires that any monies paid for fines, penalties, mitigation costs, or damages be paid by the corporation and its shareholders, not recoverable from ratepayers.

Staff recommended a position of SUPPORT AND CONTINUE TO WORK WITH AUTHOR ON DETAILS INVOLVING AIR QUALITY.

Moved by Parker; seconded by Burke; unanimously approved. Ayes: Antonovich, Burke, Buscaino, Parker, Rutherford Noes: None Absent: Mitchell

State and Federal Legislative Proposals Providing for Additional Cost Considerations in SCAQMD's Regulatory Programs

Kurt Wiese, SCAQMD General Counsel, reported on the efforts of the SCAQMD Ad Hoc Committee on Large Compliance Investments and Future Regulatory Certainty. That Committee has focused on two related issues: 1) Protecting business investments in large equipment purchases, and; 2) Enabling business to recover investments in large equipment by operating it to the end of its useful life. As shared by Supervisor Rutherford, there is a concern that providing for additional cost considerations in SCAQMD's regulatory program are being stymied by limitations in existing state and federal law. Consequently, staff sought direction from the Legislative Committee on whether to prepare state and federal legislative proposals allowing further consideration of costs for the Legislative Committee's future consideration.

Moved by Rutherford to have staff return with both state and federal bill language; seconded by Burke; unanimously approved. Ayes: Antonovich, Burke, Buscaino, Parker, Rutherford Noes: None Absent: Mitchell

Reports from SCAQMD Home Rule Advisory Group [Attachment 4]

Please refer to Attachment 4 for written reports.

Other Business: None

Public Comment Period:

No public comment.

Attachments

- 1. Attendance Record
- 2. Report on Aliso Canyon Natural Gas Leak Amendments to the Federal Energy Bill
- 3. Recommend Position on Porter Ranch/Aliso Canyon Related State Bills
- 4. SCAQMD Home Rule Advisory Group Report

ATTACHMENT 1

ATTENDANCE RECORD -February 12, 2016

SCAQMD BOARD MEMBERS:

Supervisor Michael Antonovich, Acting Chair (Videoconference) Dr. William A., Burke (Videoconference) Councilmember Joe Buscaino (Videoconference) Dr. Clark E. Parker (Videoconference) Supervisor Janice Rutherford (Videoconference)

STAFF TO COMMITTEE:

Lisha B. Smith, Deputy Executive Officer Guillermo Sanchez, Senior Public Affairs Manager Julie Franco, Senior Administrative Secretary

SCAQMD STAFF:

Leeor Alpern, Senior Public Information Specialist (Videoconference) Naveen Berry, Planning & Rules Manager Barbara Baird, Chief Deputy Counsel Marc Carrel, Program Supervisor Philip Crabbe, Community Relations Manager Tina Cox, Senior Public Information Specialist Matt Miyasato, Deputy Executive Officer Robert Paud Telecommunications Supervisor Barbara Radlein, AQ Specialist Laki Tisopulous, Assistant Deputy Executive Officer Todd Warden, Senior Public Information Specialist (Videoconference) Kim White, Public Affairs Specialist Rainbow Yeung, Senior Public Information Specialist (Videoconference) Barry R. Wallerstein, Executive Officer

OTHERS PRESENT:

Tricia Almiron, SANBAG David Czamanske, Governing Board Consultant (Cacciotti) Tom Dennis, Cassidy & Associates (teleconference) Kaleb Froehlich, Cassidy & Associates (teleconference) Jason Gonsalves, Joe A. Gonsalves & Son (teleconference) Paul Gonsalves, Joe A. Gonsalves & Son (teleconference) Will Gonzalez, Gonzalez, Quintana, Hunter & Cruz (teleconference) Stewart Harris, The Carmen Group (teleconference) Gary Hoitsma, The Carmen Group (teleconference) Mark Kadesh, Kadesh & Associates (teleconference) Chris Kierig, Kadesh & Associates (teleconference) Bill LaMarr, California Small Business Alliance Rita Loof. RadTech Margot Malarkey, Association of American Railroads Debra Mendelsohn, Governing Board Consultant (Antonovich) Clayton Miller, Construction Industry Air Quality Coalition Noel Muyco, SoCalGas David Rothbart, Los Angeles County Sanitation District Susan Stark, Tesoro Warren Weinstein, Kadesh & Associates (teleconference) Peter Whittingham, CP & A

South Coast Air Quality Management District Legislative Analysis Summary – Amendment No. 3194 (Boxer/Feinstein) to S. 2012 (Murkowski) Version: As amended February 2, 2016 PC: 2/9/16

ATTACHMENT 2

Senators Boxer and Feinstein Amendment No. 3194 – "Aliso Canyon Natural Gas Leak Task Force" to S. 2012 (Murkowski) – Energy Policy Modernization Act of 2015

Summary: Amendment No. 3194 directs Energy Secretary Ernest Moniz to lead a federal task force which would undertake a broad federal review of the cause of and the response to the natural gas leak at the SoCalGas Aliso Canyon Natural Gas Storage Facility in Porter Ranch and make recommendations to prevent or better respond to future similar incidents.

Background: This amendment is now included as part of a broader federal energy bill that is still under negotiation in the U.S. Senate. The actions being recommended by staff for consideration by the SCAQMD Legislative Committee only relate to the specific amendment language, and not the larger bill.

Status: On February 2, 2016, the U.S. Senate approved by a voice vote an amendment offered by California Senators Barbara Boxer and Dianne Feinstein to address the Aliso Canyon natural gas leak in the bipartisan energy bill. This bill is currently being considered on the Senate floor.

Specific Provisions: Specifically, this amendment language would:

- (1) Direct Energy Secretary Ernest Moniz to lead a federal task force which would undertake a broad federal review of the cause and the response to the natural gas leak at the SoCalGas Aliso Canyon Natural Gas Storage Facility in Porter Ranch as well as an analysis of:
 - Measures taken to stop the natural gas leak
 - Its impact on the health, safety, environment, and economy of the residents and property surrounding Aliso Canyon
 - How federal and State agencies responded
 - Impacts on wholesale and retail electricity prices
 - Recommendations as to other data needed and other measures to prevent future such incidents.
- (2) Direct that in addition to the Energy Department, the seven-member task force would include representatives from the Pipeline and Hazardous Materials Safety Administration, the Department of Health and Human Services, the Environmental Protection Agency, the Department of the Interior, the Department of Commerce, and the Federal Energy Regulatory Commission;

South Coast Air Quality Management District Legislative Analysis Summary – Amendment No. 3194 (Boxer/Feinstein) to S. 2012 (Murkowski) Version: As amended February 2, 2016 PC: 2/9/16

- (3) Direct the task force to issue findings within six months. In addition, the task force is required to immediately issue findings if it finds methods to solve the natural gas leak, better protect the affected communities, or finds methods to prevent other leaks.
- (4) Direct the task force to review and issue recommendations on whether to continue operations at Aliso Canyon and other facilities in close proximity to residential populations based on an assessment of the risk of a future natural gas leak.

Impacts on SCAQMD's Mission, Operations or Initiatives: This legislative amendment language would help benefit the safety and public health of residents of the South Coast region by addressing air pollution issues of the SoCalGas Aliso Canyon Natural Gas Storage Facility in Porter Ranch and seeking to prevent future similar large scale natural gas leaks.

Recommended Position/Action: Since the amendment was approved (though the bill is stalled in the Senate), staff recommends that the Legislative Committee on behalf of the SCAQMD Board send letters to Senator Boxer and Feinstein:

- (1) Thanking them for putting forward legislative language addressing this issue;
- (2) Expressing the District's support of this legislative amendment language;
- (3) Requesting that the amendment be included in other relevant bills should the energy bill not pass;
- (4) Offering to provide testimony to the task force as needed; and
- (5) Offering our staff as a resource to the Secretary and the task force as they address this issue.

The recommendation also includes sending letters to the entire California delegation, seeking their support of the Amendment.

Amendment No. 3194, as modified

(Purpose: To direct the Secretary of Energy to establish a task force to analyze and assess the Aliso Canyon natural gas leak)

At the appropriate place, insert the following:

SEC. ____. ALISO CANYON NATURAL GAS LEAK TASK FORCE.

(a) FINDINGS.---- Congress finds that--

-- (1) on October 23, 2015, a natural gas leak was discovered at a well within the Aliso Canyon Natural Gas Storage Facility in Los Angeles County in the State of California, and as of January 27, 2016, attempts by the Southern California Gas Company (referred to in this section as the ``Company") to stop the leak have not been successful; (2) the leak appears to be caused by damage to the well casing at approximately 500 feet underground; (3) the Company has attempted several times to plug the well, but as of January 28, 2016, those efforts have been unsuccessful; (4) many residents in the nearby community have reported adverse physical symptoms including dizziness, nausea, and nosebleeds as a result of the natural gas leak, and the continuing emissions from the leak have resulted in the relocation of thousands of people away from their homes and livelihoods; (5) local schools have temporarily closed, many businesses have been negatively impacted, and regular public services such as mail delivery have also been disrupted; (6) more than 86,500,000 kilograms of methane, a powerful greenhouse gas, have been emitted into the atmosphere, which is---- (A) the equivalent of 2,200,000 metric tons of carbon dioxide; or (B) more greenhouse gas than 468,000 cars emit in 1 year; (7) agencies of the State of California issued an emergency order on December 10, 2015, prohibiting injection of natural gas into the Aliso Canyon Storage Facility until further authorization; and

(b) Establishment of Task Force.--Not later than 15 days after the date of enactment of this Act, the Secretary shall lead and establish an Aliso Canyon Task Force (referred to in this section as the ``task force").

(c) Membership of Task Force.--In addition to the Secretary, the task force shall be composed of--

(1) 1 representative from the Pipeline and HazardousMaterials Safety Administration;

(2) 1 representative from the Department of Health and Human Services;

(3) 1 representative from the Environmental Protection Agency;

(4) 1 representative from the Department of the Interior;

(5) 1 representative from the Department of Commerce; and

(6) 1 representative from the Federal Energy Regulatory Commission.

(d) Report.--

(1) Final report.--

(A) In general.--Not later than 180 days after the date of enactment of this Act, the task force shall submit a final report that contains the information described in subparagraph (B) to--

(i) the Committee on Energy and Natural Resources of the Senate;

(ii) the Committee on Natural Resources of the House of Representatives;

(iii) the Committee on Environment and Public Works of the Senate;

(iv) the Committee on Transportation and Infrastructure of the House of Representatives;

(v) the Committee on Commerce, Science, and Transportation

of the Senate;

(vi) the Committee on Energy and Commerce of the House of Representatives;

(vii) the Committee on Health, Education, Labor, and Pensions of the Senate;

(viii) the Committee on Education and the Workforce of the House of Representatives;

(ix) the President; and

(x) relevant Federal and State agencies.

(B) Information included.--The report submitted under subparagraph (A) shall include, at a minimum--

(i) an analysis and conclusion of the cause of the Aliso Canyon natural gas leak;

(ii) an analysis of measures taken to stop the natural gas leak, with an immediate focus on other, more effective measures that could be taken;

(iii) an assessment of the impact of the natural gas leak on health, safety, the environment, and the economy of the residents and property surrounding Aliso Canyon;

(iv) an analysis of how Federal and State agencies responded to the natural gas leak;

(v) in order to lessen the negative impacts of natural gas leaks, recommendations on how to improve--

(I) the response to a future leak; and

(II) coordination between all appropriate Federal, State, and local agencies in the response to the Aliso Canyon natural gas leak and future natural gas leaks;

(vi) an analysis of the potential for a similar natural gas leak to occur at other underground natural gas storage facilities in the United States;

(vii) recommendations on how to prevent any future natural

gas leaks;

(viii) recommendations on whether to continue operations at Aliso Canyon and other facilities in close proximity to residential populations based on an assessment of the risk of a future natural gas leak;

(ix) a recommendation on information that is not currently collected but that would be in the public interest to collect and distribute to agencies and institutions for the continued study and monitoring of natural gas infrastructure in the United States;

(x) an analysis of the impact of the Aliso Canyon natural gas leak on wholesale and retail electricity prices; and(xi) an analysis of the impact of the Aliso Canyon natural gas leak on the reliability of the bulk-power system.

(2) Publication.--The final report under paragraph (1) shall be made available to the public in an electronically accessible format.

(3) If, before the final report is submitted under paragraph (1) the task force finds methods to solve the natural gas leak at Aliso Canyon; better protect the affected communities; or finds methods to help prevent other leaks, they must immediately issue such findings to the same entities that are to receive the final report.

(e) Authorization of Appropriations.--There are authorized to be appropriated to carry out this section such sums as may be necessary. South Coast Air Quality Management District Legislative Analysis Summary – SB 886 (Pavley) Bill Version: As introduced on January 20, 2016 GSA

ATTACHMENT 3

SB 886 (Pavley) Aliso Canyon Natural Gas Storage Facility Moratorium

Summary: SB 886 requires a moratorium on injections of natural gas into any wells located at the Aliso Canyon storage facility until an extensive well audit has been performed to DOGGR's satisfaction, and the minimization or elimination of the Aliso Canyon storage facility shall be evaluated by the CPUC.

Background: Southern California Gas Company (SoCalGas) operates the Aliso Canyon Storage Facility in Porter Ranch in Northwest Los Angeles County. That reservoir has the capacity to store over 160 billion cubic feet of natural gas and SoCalGas operates about 115 injection and withdrawal wells throughout the site. It injects natural gas into the underground reservoir when the demand for natural gas is low and withdraws it when the demand for natural gas is high.

On October 23, 2015 SoCalGas discovered that a well (known as Well SS-25) used to inject and withdraw natural gas from the underground storage reservoir at their Aliso Canyon facility was leaking. Over three months later, the well continues to be a major source of methane emissions – likely the single largest point source of greenhouse gas emissions in the state during this time period – with cumulative emissions to date estimated to be on the order of the annual emissions from 450,000 cars or over 6% of the total annual emissions from all of California's oil refineries. The leak has caused major and unprecedented upheaval in the Porter Ranch community. There are numerous reports of local residents, including children, experiencing health problems. The Los Angeles Unified School District temporarily closed two schools and relocated the students. In addition to health concerns, community members have additionally raised business losses, environmental impacts and damage to property values, among other concerns. Over 4,500 households have relocated (at SoCal Gas' expense) and an additional 1,100 have been offered opportunities to relocate.

Seven efforts to "kill" the leaking well have failed and the Division of Oil, Gas and Geothermal Resources (DOGGR) ordered that a relief well be drilled. Current estimates are that the leak will be controlled using this relief well by March 2016. The leaking well was originally drilled in 1953 and numerous concerns have been raised about the age, maintenance practices and safety of the Aliso Canyon facility.

From October 23, 2015 through February 9, 2016 the SCAQMD has received nearly 2,300 odor complaints from the public regarding Aliso Canyon. From the onset, SCAQMD staff has participated in daily calls with SoCalGas and other government agencies to coordinate a response to the leak. SCAQMD staff has also participated in hearings regarding the SoCalGas Aliso Canyon leak before the Los Angeles County Board of Supervisors and Los Angeles City Council. SCAQMD staff has also participated in a number of community meetings, including with the Porter Ranch Neighborhood Council. In addition, SCAQMD staff has reviewed and

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commented on the odor mitigation and air monitoring plans proposed by SoCalGas and has participated in daily conference calls with SoCalGas and other first-responding and environmental and public health agencies at the state and local level about the status of well repair and odor abatement activities.

On November 5, 2015, the SCAQMD issued a Notice to Comply to SoCalGas and on November 23, 2015, SCAQMD issued a Notice of Violation (NOV) alleging an ongoing public nuisance pursuant to H&S Code §41700 and District Rule 402. After lengthy testimony and in response to a petition filed by the SCAQMD on December 10, 2015, the SCAQMD Hearing Board on January 23rd ordered SoCalGas to take immediate action to minimize odors and air pollution from the massive gas leak near Porter Ranch. Further, on January 26, SCAQMD filed a complaint with the Los Angeles County Superior Court against SoCaGas for creating a public nuisance.

As proposed by Supervisor Antonovich, the SCAQMD Governing Board passed Resolution 16-1 on January 8, 2016. It urges that Governor Edmund G. Brown, Jr. request that funds obtained from the Southern California Gas Company for a greenhouse gas program to mitigate methane emissions be spent on measures to benefit the Porter Ranch community adversely impacted by those emissions, and the Southern California region to the extent that it is infeasible to conduct projects in Porter Ranch.

On January 11, Senators DeLeon, Pavley, Allen and Huff announced their legislative package in response to this incident, intending to address the state and region's public safety needs while recognizing the need for energy reliability.

Status: 1/28/2016 Referred to Committee on Natural Resources & Water and the Committee on Environmental Quality.

Specific Provisions: SB 886 is an urgency measure and would go into effect immediately after passage and signature by the Governor. Specifically, the bill would:

- Require an immediate moratorium on natural gas injection into any wells located at the Aliso Canyon reservoir.
- Restrict production of gas through wells drilled prior to 1954 at Aliso Canyon until those wells have been inspected and determined to meet the conditions listed below.
- The moratorium and restrictions will stay in effect until the following conditions are met:
 - The integrity of the gas storage wells have been "quantitatively and objectively evaluated using state-of-the-art technology." The methods used will be determined with input from experts and the community in a public process.
 - Any well posing an enhanced risk of failure is repaired.
 - DOGGR determines that the overall risk from well failure to the community from the facility is low and the California Public Utilities Commission (CPUC) and the California Energy Commission agree.

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• Additionally, the CPUC will evaluate whether the Aliso Canyon storage facility can be shut-down or its use minimized without affecting regional energy reliability.

Impacts on SCAQMD's mission, operations or initiatives:

SB 886 builds upon DOGGR's orders to SoCalGas and its recently proposed emergency regulations, the Governor's January 6, 2016 State of Emergency Declaration and the Order for Abatement issued by the SCAQMD hearing Board on January 23, 2016. SB 886 is consistent with SCAQMD's efforts to protect the public, the region's need for energy reliability, and SCAQMD's Order of Abatement which includes requirements to:`

- Immediately cease and desist from operating the Aliso Canyon storage facility in a manner that violates H&S Code §41700¹ and District Rule 402²;
- Permanently seal the well;
- Implement an enhanced well inspection, maintenance, leak detection and reporting program;
- Conduct a health study on the potential impacts of the exposure that may potentially affect the nearby communities; and
- Publish and enact an air quality notification plan.

Recommended Position: SUPPORT AND CONTINUE TO WORK WITH AUTHOR ON DETAILS INVOLVING AIR QUALITY AND SCAQMD OPERATIONS.

² SCAQMD Rule 402 Nuisance

¹ Health and Safety Code § <u>41700.</u>

⁽a) Except as otherwise provided in Section 41705, a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property.

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

No. 886

Introduced by Senator Pavley (Principal coauthors: Senators De León and Huff) (Coauthor: Senator Allen) (Coauthor: Assembly Member Wilk)

January 20, 2016

An act to add Section 3217 to the Public Resources Code, and to add Section 713 to the Public Utilities Code, relating to natural gas, and declaring the urgency thereof, to take effect immediately.

LEGISLATIVE COUNSEL'S DIGEST

SB 886, as introduced, Pavley. Natural gas storage: moratorium.

(1) Under existing law, the Division of Oil, Gas, and Geothermal Resources in the Department of Conservation regulates the drilling, operation, maintenance, and abandonment of oil and gas wells in the state. Existing law requires the State Oil and Gas Supervisor to supervise the drilling, operation, maintenance, and abandonment of wells and the operation, maintenance, and removal or abandonment of tanks and facilities related to oil and gas production within an oil and gas field, so as to prevent damage to life, health, property, and natural resources, as provided; to permit owners and operators of wells to utilize all known methods and practices to increase the ultimate recovery of hydrocarbons; and to perform the supervisor's duties in a manner that encourages the wise development of oil and gas resources to best meet oil and gas needs in this state. Under existing law, a person who fails to comply with certain requirements relating to the regulation of oil or gas operations is guilty of a misdemeanor.

This bill would require the supervisor to immediately institute a moratorium on injections of natural gas into any wells located within and serving the Aliso Canyon storage facility located in the County of

Los Angeles until specified conditions are met. The bill would also require the supervisor to prohibit the production of natural gas by any well originally drilled earlier than 1954 at the Aliso Canyon storage facility located in the County of Los Angeles until specified conditions are met, except as specified. Because a violation of these requirements would be a crime, the bill would impose a state-mandated local program.

(2) Under existing law, the Public Utilities Commission is authorized to supervise and regulate every public utility in the state.

This bill would require the commission to determine the feasibility of minimizing or eliminating use of the Aliso Canyon natural gas storage facility located in the County of Los Angeles while still maintaining energy reliability for the region, and to consult with specified entities in making its determination.

(3) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

(4) This bill would declare that it is to take effect immediately as an urgency statute.

Vote: $\frac{2}{3}$. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

The people of the State of California do enact as follows:

SECTION 1. Section 3217 is added to the Public Resources
 Code, to read:

3 3217. (a) The supervisor shall immediately institute a 4 moratorium on injections of natural gas into any wells located 5 within and serving the Aliso Canyon storage facility located in the 6 County of Los Angeles until all of the following conditions are

7 met:

8 (1) The integrity of each well has been quantitatively and 9 objectively evaluated using state-of-art technology and the risks 10 posed by well failure have been evaluated.

11 (A) The age, history, and condition of each well shall be 12 specifically addressed, with particular emphasis on wells drilled 13 prior to 2006.

(B) The technical methods and equipment used to evaluate wellintegrity and the risks posed by well failure shall be determined

1 by the supervisor with input from independent experts and the2 public through a public process.

3 (2) Any well posing an enhanced risk of failure has been
4 repaired to mitigate the enhanced risk or plugged and abandoned.
5 (3) The supervisor determines that the overall risk from well

6 failure satisfies the supervisor's duty pursuant to Section 3106 to
7 prevent damage to life, health, property, and natural resources and

8 other requirements.

9 (4) The Public Utilities Commission and the State Energy 10 Resources Conservation and Development Commission concur 11 with the supervisor's determination in paragraph (3).

12 (b) The supervisor shall prohibit the production of natural gas 13 by any well originally drilled earlier than 1954 at the Aliso Canyon 14 storage facility located in the County of Los Angeles until after 15 the integrity of and the risks associated with any of these wells 16 have been evaluated and determinations by the supervisor, with 17 the concurrence of the commissions, have been made pursuant to 18 the process described in subdivision (a), except when necessary 19 to do either of the following:

(1) Respond to the uncontrolled leak of natural gas from the
"Standard Sesnon 25" well (American Petroleum Institute
identification number 03700776).

(2) Maintain regional energy reliability, at the written directionof the commissions.

25 SEC. 2. Section 713 is added to the Public Utilities Code, to 26 read:

27 713. The commission shall determine the feasibility of 28 minimizing or eliminating use of the Aliso Canyon natural gas 29 storage facility located in the County of Los Angeles while still 30 maintaining energy reliability for the region. The commission shall 31 consult with the State Energy Resources Conservation and 32 Development Commission, the Independent System Operator, the 33 Division of Oil, Gas, and Geothermal Resources in the Department 34 of Conservation, and other relevant government entities, in making 35 its determination.

36 SEC. 3. No reimbursement is required by this act pursuant to 37 Section 6 of Article XIIIB of the California Constitution because 38 the only costs that may be incurred by a local agency or school 39 district will be incurred because this act creates a new crime or

40 infraction, eliminates a crime or infraction, or changes the penalty

- 1 for a crime or infraction, within the meaning of Section 17556 of
- 2 the Government Code, or changes the definition of a crime within
- 3 the meaning of Section 6 of Article XIII B of the California
- 4 Constitution.
- 5 SEC. 4. This act is an urgency statute necessary for the
- 6 immediate preservation of the public peace, health, or safety within
- 7 the meaning of Article IV of the Constitution and shall go into
- 8 immediate effect. The facts constituting the necessity are:
- 9 In order to mitigate, at the earliest possible time, ongoing harm
- 10 from the gas leak at the Aliso Canyon storage facility, and to
- 11 evaluate the integrity of and the risks associated with older wells
- 12 at that facility, it is necessary that this act take effect immediately.

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South Coast Air Quality Management District Legislative Analysis Summary – SB 887 (Pavley) Bill Version: As introduced on January 20, 2016 GSA

SB 887 (Pavley) Natural Gas Storage Wells

Summary: SB 887 creates a comprehensive framework for DOGGR's oversight of natural gas storage wells.

Background: Southern California Gas Company (SoCalGas) operates the Aliso Canyon Storage Facility in Porter Ranch in northwest Los Angeles County. That reservoir has the capacity to store over 160 billion cubic feet of natural gas and SoCal Gas operates about 115 injection and withdrawal wells throughout the site. It injects natural gas into the underground reservoir when the demand for natural gas is low and withdraws it when the demand for natural gas is high.

On October 23, 2015 SoCalGas discovered that a well (known as Well SS-25) used to inject and withdraw natural gas from the underground storage reservoir at their Aliso Canyon facility was leaking. Over three months later, the well continues to be a major source of methane emissions – likely the single largest point source of greenhouse gas emissions in the state during this time period – with cumulative emissions to date estimated to be on the order of the annual emissions from 450,000 cars or over 6% of the total annual emissions from all of California's oil refineries. The leak has caused major and unprecedented upheaval in the Porter Ranch community. There are numerous reports of local residents, including children, experiencing health problems. The Los Angeles Unified School District temporarily closed two schools and relocated the students. In addition to health concerns, community members have additionally raised business losses, environmental impacts and damage to property values, among other concerns. Over 4500 households have relocated (at SoCalGas' expense) and an additional 1,100 have been offered opportunities to relocate.

Seven efforts to "kill" the leaking well have failed and the Division of Oil, Gas and Geothermal Resources (DOGGR) ordered that a relief well be drilled. Current estimates are that the leak will be controlled using this relief well by March 2016. The leaking well was originally drilled in 1953 and numerous concerns have been raised about the age, maintenance practices and safety of the Aliso Canyon facility.

From October 23, 2015 through February 9, 2016 the SCAQMD has received nearly 2,300 odor complaints from the public regarding Aliso Canyon. From the onset, SCAQMD staff has participated in daily calls with SoCalGas and other government agencies to coordinate a response to the leak. SCAQMD staff has also participated in hearings regarding the SoCalGas Aliso Canyon leak before the Los Angeles County Board of Supervisors and Los Angeles City Council. SCAQMD staff has also participated in a number of community meetings, including with the Porter Ranch Neighborhood Council. In addition, SCAQMD staff has reviewed and commented on the odor mitigation and air monitoring plans proposed by SoCalGas and has participated in daily conference calls with SoCalGas and other first-responding and environmental and public health agencies at the state and local level about the status of well repair and odor abatement activities.

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On November 5, 2015, the SCAQMD issued a Notice to Comply to SoCalGas and on November 23, 2015, SCAQMD issued a Notice of Violation (NOV) alleging an ongoing public nuisance pursuant to H&S Code §41700 and District Rule 402. After lengthy testimony and in response to a petition filed by the SCAQMD on December 10, 2015, the SCAQMD Hearing Board on January 23rd ordered SoCalGas to take immediate action to minimize odors and air pollution from the massive gas leak near Porter Ranch. Further, on January 26, SCAQMD filed a complaint with the Los Angeles County Superior Court against SoCalGas for creating a public nuisance.

As proposed by Supervisor Antonovich, the SCAQMD Governing Board passed Resolution 16-1 on January 8, 2016. It urges that Governor Edmund G. Brown, Jr. request that funds obtained from the Southern California Gas Company for a greenhouse gas program to mitigate methane emissions be spent on measures to benefit the Porter Ranch community adversely impacted by those emissions, and the Southern California region to the extent that it is infeasible to conduct projects in Porter Ranch.

On January 11, Senators DeLeon, Pavley, Allen and Huff announced their legislative package in response to this incident, intending to address the state and region's public safety needs and need for energy reliability.

Status: 1/28/2016 Referred to Committee on Natural Resources & Water and the Committee on Environmental Quality.

Specific Provisions:

SB 887 will:

- Set new minimum standards for natural gas storage wells including annual inspections, mandatory setbacks from homes and schools, stricter requirements near homes and schools, automatic downhole shutoff systems (i.e. subsurface safety valves), regular proactive and quantitative evaluations of well integrity, continuous well operation and air quality monitoring, and limiting production and injection to well tubing only, among others.
- Require the phase-out of old wells and require existing wells to be brought in compliance with SB 887's requirements.
- Require operators of natural gas storage wells to submit the following plans for DOGGR's approval by a date to be determined: well maintenance; operating parameters and conditions; air quality monitoring; and leak prevention and response prior to approving or reworking gas storage wells. The leak prevention and response plan shall include at a minimum protocol for public notification of any leak, training, and prepositioning of response equipment. Preparations for drilling a relief well must start within 24 hours of a significant leak.
- Provide for an independent panel of experts to develop "best practices" for natural gas storage wells that DOGGR shall review and incorporate into its regulations.
- Require all natural gas storage well operators to disclose all well-related operations and activities to DOGGR.

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To provide **public transparency** in response to public concerns, SB 887 additionally requires:

- Public review of the location of a natural gas well or conversion of an existing well to a natural gas storage well.
- Immediate notification to DOGGR of leaking wells.
- Adds the new SB 887 provisions to DOGGR's civil penalty authority and subjects violators to a penalty not to exceed \$25,000 for each violation.
- DOGGR shall post leaking well information on its website and provide regular updates to the public.

SB 887 further:

- Provides the public standing to force enforcement of SB 887's provisions through a writ of mandate.
- Requires the California Air Resources Board (CARB) with local air districts and others to develop a comprehensive and continuous monitoring program for the ambient concentration of natural gas, including spectral imaging, at natural gas storage facilities.
- Requires DOGGR, in consultation with health regulators, to perform a risk assessment of natural gas storage wells that includes addressing well age and the potential impact of a leak on the public and environment.

Impacts on SCAQMD's mission, operations or initiatives:

SB 887 builds upon DOGGR's orders to SoCalGas and its recently proposed emergency regulations, the Governor's January 6, 2016 State of Emergency Declaration, and the SCAQMD Order for Abatement. SB 887's proposed Health and Safety Code Section 42710 and Public Resources Code Section 3136 may create costs for the SCAQMD related to monitoring and enforcement. These proposed statutes require CARB to consult with local air districts and DOGGR to develop continuous air quality monitoring prior to a natural gas storage well being drilled or reworked. SB 887 mandates new requirements for notice of well drilling and reworking to DOGGR and the public. SCAQMD Rule 1148.2(d) currently requires oil and gas well operators to provide at least 10 days' notice, but not less than 48 hours, prior to reworking or drilling a well.

Recommended Position: SUPPORT AND CONTINUE TO WORK WITH AUTHOR ON DETAILS INVOLVING AIR QUALITY AND SCAQMD OPERATIONS.

Introduced by Senator Pavley (Coauthors: Senators Allen and De León) (Coauthor: Assembly Member Wilk)

January 20, 2016

An act to add Chapter 6 (commencing with Section 42710) to Part 4 of Division 26 of the Health and Safety Code, and to amend Section 3236.5 of, and to add Sections 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, and 3144 to, the Public Resources Code, relating to natural gas.

LEGISLATIVE COUNSEL'S DIGEST

SB 887, as introduced, Pavley. Natural gas storage wells.

Under existing law, the Division of Oil, Gas, and Geothermal Resources in the Department of Conservation regulates the drilling, operation, maintenance, and abandonment of oil and gas wells in the state. Existing law provides that a person who fails to comply with specific laws relating to the regulation of oil or gas operations is guilty of a misdemeanor.

This bill would require, before January 1, 2018, and annually thereafter, the division to inspect all natural gas storage wells serving or located in a natural gas storage facility and would prescribe standards for a natural gas storage well. This bill would require a natural gas storage well in existence on December 31, 2016, to be brought into compliance with the provisions of this bill by an unspecified date and the use of wells older than an unspecified age to be phased out by an unspecified date. This bill would prohibit the division from issuing a permit for a new natural gas storage well located within an unspecified distance of a sensitive receptor, as defined, and would require the division to order operators to cease the use of, and plug and abandon,

an existing natural gas storage well that is within an unspecified distance of a sensitive receptor by an unspecified date. This bill would require, in the event of a loss of the integrity of a natural gas storage well, well casing, or cementing resulting in a significant, uncontrolled leak of natural gas, that preparations for the drilling of a relief well begin within 24 hours of the discovery of the leak. This bill would require the operator, in the event of a leak of any size from a natural gas storage well, to notify the division immediately and would require the division to post information about the leak on its Internet Web site, as prescribed. This bill would require the division to convene an independent panel of recognized experts to develop best practices for natural gas storage facilities and to review and incorporate the best practices developed by the panel into its regulations for natural gas storage wells, as appropriate, and for other wells under the division's jurisdiction, as applicable. This bill would require the division, in consultation with the Office of Environmental Health Hazard Assessment, the State Department of Public Health, and the Department of Industrial Relations, to perform a risk assessment of natural gas storage wells and to report the findings of the risk assessment to the Legislature. This bill would require the State Air Resources Board, in consultation with any local air district and the division, to develop guidelines for a monitoring program that includes continuous monitoring of the ambient concentration of natural gas at sufficient locations throughout a natural gas storage facility or planned natural gas storage facility to identify natural gas leaks. This bill would require all materials provided to the division to comply with these provisions to be posted and available to the public on its Internet Web site. Because a violation of these requirements would be a crime, the bill would impose a state-mandated local program.

Existing law requires the operator of a well to file a written notice of intention to commence drilling with, and prohibits any drilling until approval is given by, the supervisor or district deputy. Under existing law, the notice is deemed approved if the supervisor or district deputy fails to respond to the notice in writing within 10 working days from receipt and is deemed canceled if operations have not commenced within one year of receipt. Existing law provides that these provisions also apply to the deepening or redrilling of the well, any operation involving the plugging of the well, or any operations permanently altering in any manner the casing of the well.

This bill would require certain materials, relating to wells serving or located in a natural gas storage facility, to be submitted by the operator and approved at the supervisor's discretion before approval of the notice. This bill would provide that the public has a right to review the location of all new natural gas storage wells or existing wells converting to a natural gas storage well before the approval of the notice.

Existing law requires the owner or operator of any well to keep, or cause to be kept, a careful and accurate log, core record, and history of the drilling of the well.

This bill would require the well history to include all operations, injection, production, and emplacement of any materials into a natural gas storage well, and to be disclosed to the division by the operator, as specified.

Under existing law, a person who violates certain statutes or regulations relating to oil and gas well operations is subject to a civil penalty not to exceed \$25,000 for each violation. Existing law provides that the unreasonable waste of natural gas by act, omission, sufferance, or insistence is opposed to the public interest and is unlawful.

This bill would provide that a violation of the prohibition against the unreasonable waste of natural gas is subject to the civil penalty not to exceed \$25,000 for each violation.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

The people of the State of California do enact as follows:

1 SECTION 1. The Legislature finds and declares as follows:

2 (a) Public transparency regarding regulations and regulatory3 activity to protect public health and welfare and natural resources4 is essential.

5 (b) On October 23, 2015, a significant, uncontrolled leak from 6 a natural gas storage well that was originally drilled over 60 years 7 ago was discovered in the Aliso Canyon natural gas storage facility 8 located in the County of Los Angeles. Initial efforts to stop the 9 leak failed.

10 (c) The Division of Oil, Gas, and Geothermal Resources in the

11 Department of Conservation responded swiftly to the leak,

1 including by issuing two orders that, among other things, require 2 the use of relief wells. The division has been working around the 3 clock overseeing efforts to stop the leak. 4 (d) It was several days before the community was notified of 5 the leak, although numerous residents started reporting odor 6 concerns almost immediately. The leaking well is up the hill and 7 approximately one and one-quarter miles away from the nearest 8 home. Other natural gas storage wells serving this facility are 9 located closer to homes. 10 (e) The Governor declared a state of emergency on January 6, 11 2016, in order to facilitate the ongoing state response and efforts 12 to stop the leak. 13 (f) The standards for natural gas storage wells need to be 14 improved in order to reflect 21st century technology, recognize 15 that these facilities may be in locations near population centers, and ensure a disaster like the Aliso Canyon leak does not happen 16 17 again. 18 SEC. 2. Chapter 6 (commencing with Section 42710) is added 19 to Part 4 of Division 26 of the Health and Safety Code, to read: 20 CHAPTER 6. NATURAL GAS STORAGE FACILITY MONITORING 21 22 23 42710. (a) The state board, in consultation with any local air 24 district and the Division of Oil, Gas, and Geothermal Resources 25 in the Department of Conservation, shall develop a natural gas 26 storage facility monitoring program that includes continuous 27 monitoring of the ambient concentration of natural gas at sufficient 28 locations throughout a natural gas storage facility or planned 29 natural gas storage facility to identify natural gas leaks. 30 (b) The program shall include guidelines for the continuous 31 monitoring which shall include, at minimum, spectral visual 32 imaging and quantitative chemical analytical monitoring. 33 (c) All materials provided to comply with this section shall be 34 posted and available to the public on the Internet Web site of the 35 Division of Oil, Gas, and Geothermal Resources. SEC. 3. Section 3133 is added to the Public Resources Code, 36

37 to read:

38 3133. (a) As used in this article, "natural gas storage well"

39 means an active or idle natural gas storage well serving or located

40 in a natural gas storage facility.

1 (b) Before January 1, 2018, and annually thereafter, the division 2 shall inspect all natural gas storage wells.

3 (c) A natural gas storage well in existence on December 31, 4 2016, shall be brought into compliance with this article by

5 The use of a natural gas storage well older than _____ shall be

6 phased out by

SEC. 4. Section 3134 is added to the Public Resources Code,
to read:

9 3134. A natural gas storage well shall meet all of the following 10 standards:

(a) The well shall have an automatic downhole shutoff system,including, but not limited to, subsurface safety valves, deployed

13 in order to limit leaks associated with a loss of the integrity of a

14 well, well casing, or cementing. The shutoff system shall be tested

- and the results of the test shall be reported to the division no less
- 16 than annually.

17 (b) Proactive evaluation of the integrity of the well, well casing,

18 or cementing across the entire length of the well shall be conducted

19 in order to quantitatively assess the risks posed by erosion,

20 corrosion, aging, scaling, cracking, and any other process that may

produce natural gas leaks. This evaluation shall include visualimaging along the entire length of the well. A natural gas storage

well shall be evaluated pursuant to the measures in this subdivision

- at least annually if the well was originally drilled more than 20
- 25 years ago.

(c) Natural gas injection and production shall be through tubingonly and isolated from contact with the well casing.

(d) Annular pressure and production or injection flow rate shallbe continuously monitored.

30 SEC. 5. Section 3135 is added to the Public Resources Code, 31 to read:

32 3135. (a) For the purposes of this section, "sensitive receptor"

includes, but is not limited to, a school, hospital, and residentialhousing.

(b) In addition to the requirements of Section 3134, a natural
gas storage well that is within 10,000 feet of a sensitive receptor
shall meet both of the following requirements:

(1) Have continuous air quality monitoring for natural gas leaksat the wellhead.

1	(2) Be evaluated pursuant to the measures in subdivision (b) of
2	Section 3134 at least annually.
3	(c) The division shall not issue a permit for a new natural gas
4	storage well located within feet of a sensitive receptor, and
5	the division shall order operators to cease the use of, and plug and
6	abandon, an existing natural gas storage well within feet of
7	a sensitive receptor by
8	SEC. 6. Section 3136 is added to the Public Resources Code,
9	to read:
10	3136. (a) The operator of a natural gas storage well shall
11	submit for the supervisor's approval the following materials:
12	(1) A regular maintenance program for the well and the portion
13	of the facility within the division's jurisdiction.
14	(2) Operating conditions and parameters for the well and the
15	portion of the facility within the division's jurisdiction.
16	(3) A monitoring program for the well and the portion of the
17	facility within the division's jurisdiction that includes air quality
18	monitoring pursuant to Chapter 6 (commencing with Section
19	42710) of Part 4 of Division 26 of the Health and Safety Code.
20	Air quality monitoring sufficient to include a new or reworked
21	well shall be in operation before a new well is drilled or reworked.
22	(4) A natural gas leak prevention and response program that
23	addresses the full range of natural gas leaks possible at the facility
24	with specific response plans that provide for immediate control of
25	the leak. The prevention and response program shall include, but
26	is not limited to, all of the following:
27	(A) A protocol for public notice of the leak to the community
28	by the operator.
29	(B) Prepositioning and identification of materials and personnel
30	necessary to respond to leaks. This shall include materials,
31	including equipment to capture leaked gas, to respond to the leak
32	itself as well as to protect public health.
33	(C) A training program to ensure site personnel are prepared to
34	respond to a leak.
35	(b) All of the materials described in subdivision (a) shall be
36	approved by the supervisor, at his or her discretion, and in the

possession of the division before the supervisor or district deputy approves a notice required pursuant to Section 3203.

(c) All of the materials described in subdivision (a) shall be reported to the division annually. The operator shall not deviate

1 from the programs and other conditions and protocols contained

2 in the materials without prior written approval by the supervisor.

3 SEC. 7. Section 3137 is added to the Public Resources Code,4 to read:

5 3137. The public has a right to review the location of a natural
6 gas storage well or conversion of an existing well to a natural gas
7 storage well before the approval of any notice required pursuant
8 to Section 3203.

9 SEC. 8. Section 3138 is added to the Public Resources Code, 10 to read:

3138. In the event of a loss of the integrity of a natural gas
storage well, well casing, or cementing resulting in a significant,
uncontrolled leak of natural gas, preparations for the drilling of a
relief well shall begin within 24 hours of the discovery of the leak

15 regardless of any other activities undertaken to stop the leak.

SEC. 9. Section 3139 is added to the Public Resources Code,to read:

3139. In the event of a leak of any size from a natural gas
storage well, the operator shall notify the division immediately.
Within 24 hours of notification, the division shall post information

Within 24 hours of notification, the division shall post informationabout the leak on its Internet Web site and provide regular updates

22 to the public until the leak is stopped.

SEC. 10. Section 3140 is added to the Public Resources Code,to read:

25 3140. (a) The division shall convene an independent panel of 26 recognized experts to develop best practices for natural gas storage 27 facilities. The panel shall consider at least of all the following:

27 facilities. The panel shall consider at least of all the following:

- (1) The proximity of a natural gas storage facility and wells topopulation.
- 30 (2) The age when a well should be plugged and abandoned, and31 what standards the plugging and abandonment should meet.
- 32 (3) The range of proactive methods to assess the integrity of a33 well, well casing, and cementing.
- 34 (4) A thorough analysis of the risks associated with the 35 conversion of a well for use as a natural gas storage well.

36 (5) Natural gas storage well operating, maintenance, and37 monitoring standards.

38 (b) Upon completion of the panel's work pursuant to subdivision

39 (a), the division shall review and incorporate best practices

40 developed by the panel into its regulations for natural gas storage

- 1 wells, as appropriate, and for other wells under the division's 2 jurisdiction, as applicable.
- 3 SEC. 11. Section 3141 is added to the Public Resources Code, 4 to read:
- 5 3141. (a) The division, in consultation with the Office of
 6 Environmental Health Hazard Assessment, the State Department
 7 of Public Health, and the Department of Industrial Relations, shall
- 8 perform a risk assessment of natural gas storage wells. The risk
- 9 assessment shall include, but is not limited to, all of the following
- 10 information:
- 11 (1) The age of a well.
- 12 (2) The service history and operating conditions of the well.
- (3) The potential impact of a leak on public, occupational, andenvironmental health.
- 15 (b) The risk assessment shall be subjected to peer review by 16 independent experts.
- (c) The findings of the risk assessment shall be reported to the
 Legislature in accordance with Section 9795 of the Government
 Code.
- 20 SEC. 12. Section 3142 is added to the Public Resources Code, 21 to read:
- 3142. To ensure that the division has all the records it needs to evaluate natural gas storage wells, the well history maintained pursuant to Section 3213 shall include all operations, injection, production, and emplacement of any materials into the well. The operator shall disclose the well history to the division for each
- operation, injection, production, and emplacement of any materialinto the well.
- SEC. 13. Section 3143 is added to the Public Resources Code,to read:
- 31 3143. All materials provided to the division to comply with 32 Section 3133 to 3142, inclusive, shall be posted and available to
- 33 the public on the Internet Web site of the division.
- 34 SEC. 14. Section 3144 is added to the Public Resources Code,35 to read:
- 36 3144. A member of the public may bring suit for writ of
 37 mandate against the division for failure to enforce Sections 3133
 38 to 3143, inclusive.
- 39 SEC. 15. Section 3236.5 of the Public Resources Code is 40 amended to read:
 - 99

1 3236.5. (a) A person who violates this chapter or a regulation 2 implementing this chapter is subject to a civil penalty not to exceed 3 twenty-five thousand dollars (\$25,000) for each violation. A person 4 who commits a violation of Article 3 (commencing with Section 5 3150) or Section 3300 is subject to a civil penalty of not less than 6 ten thousand dollars (\$10,000) and not to exceed twenty-five 7 thousand dollars (\$25,000) per day per violation. An act of God 8 and an act of vandalism beyond the reasonable control of the 9 operator shall not be considered a violation. The civil penalty shall 10 be imposed by an order of the supervisor pursuant to Section 3225 11 upon a determination that a violation has been committed by the 12 person charged. The imposition of a civil penalty under this section 13 shall be in addition to any other penalty provided by law for the 14 violation. When establishing the amount of the civil penalty 15 pursuant to this section, the supervisor shall consider, in addition 16 to other relevant circumstances, all of the following: 17 (1) The extent of harm caused by the violation.

- 18 (2) The persistence of the violation.
- 19 (3) The pervasiveness of the violation.
- 20 (4) The number of prior violations by the same violator.
- 21 (b) An order of the supervisor imposing a civil penalty shall be

22 reviewable pursuant to Article 6 (commencing with Section 3350).

23 When the order of the supervisor has become final and the penalty

24 has not been paid, the supervisor may apply to the appropriate

25 superior court for an order directing payment of the civil penalty.

26 The supervisor may also seek from the court an order directing

that production from the well or use of the production facility that is the subject of the civil penalty order be discontinued until the

violation has been remedied to the satisfaction of the supervisor

30 and the civil penalty has been paid.

31 (c) Any amount collected under this section shall be deposited32 in the Oil, Gas, and Geothermal Administrative Fund.

33 SEC. 16. No reimbursement is required by this act pursuant to

34 Section 6 of Article XIIIB of the California Constitution because

35 the only costs that may be incurred by a local agency or school

36 district will be incurred because this act creates a new crime or

37 infraction, eliminates a crime or infraction, or changes the penalty

38 for a crime or infraction, within the meaning of Section 17556 of

39 the Government Code, or changes the definition of a crime within

SB 887

- 1 the meaning of Section 6 of Article XIII B of the California
- 2 Constitution.

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South Coast Air Quality Management District Legislative Analysis Summary – SB 888 (Allen) Bill Version: As introduced on January 20, 2016 GSA

SB 888 (Allen) Gas Corporations: Emergency Management

Summary: SB 888 designates the Office of Emergency Services as the lead agency for emergency response for leaks of natural gas from storage facilities like Aliso Canyon. The Office of Emergency Services would be required to coordinate the emergency response, public health and environmental assessment, monitoring, and control of the leak among other state agencies. In addition, the bill requires that any monies paid for fines, penalties, or damages be paid by the corporation and its shareholders, not recoverable from ratepayers.

Background: Southern California Gas Company (SoCalGas) operates the Aliso Canyon Storage Facility in Porter Ranch in northwest Los Angeles County. That reservoir has the capacity to store over 160 billion cubic feet of natural gas and SoCal Gas operates about 115 injection and withdrawal wells throughout the site. It injects natural gas into the underground reservoir when the demand for natural gas is low and withdraws it when the demand for natural gas is high.

On October 23, 2015 SoCalGas discovered that a well (known as Well SS-25) used to inject and withdraw natural gas from the underground storage reservoir at their Aliso Canyon facility was leaking. Over three months later, the well continues to be a major source of methane emissions – likely the single largest point source of greenhouse gas emissions in the state during this time period – with cumulative emissions to date estimated to be on the order of the annual emissions from 450,000 cars or over 6% of the total annual emissions from all of California's oil refineries. The leak has caused major and unprecedented upheaval in the Porter Ranch community. There are numerous reports of local residents, including children, experiencing health problems. The Los Angeles Unified School District temporarily closed two schools and relocated the students. In addition to health concerns, community members have additionally raised business losses, environmental impacts and damage to property values, among other concerns. Over 4,500 households have relocated (at SoCalGas' expense) and an additional 1,100 have been offered opportunities to relocate.

Seven efforts to "kill" the leaking well have failed and the Division of Oil, Gas and Geothermal Resources (DOGGR) ordered that a relief well be drilled. Current estimates are that the leak will be controlled using this relief well by March 2016. The leaking well was originally drilled in 1953 and numerous concerns have been raised about the age, maintenance practices and safety of the Aliso Canyon facility.

From October 23, 2015 through February 9, 2016 the SCAQMD has received nearly 2,300 odor complaints from the public regarding Aliso Canyon. From the onset, staff of the South Coast Air Quality Management District (SCAQMD) has participated in daily calls with SoCalGas and other government agencies to coordinate a response to the leak. SCAQMD staff has also participated in hearings regarding the SoCalGas Aliso Canyon leak before the Los Angeles County Board of Supervisors and Los Angeles City Council. SCAQMD staff has also participated in a number of community meetings, including with the Porter Ranch Neighborhood Council. In addition, SCAQMD staff has reviewed and commented on the odor mitigation and air monitoring plans proposed by SoCalGas and has participated in daily conference calls with SoCalGas and other first-responding and

South Coast Air Quality Management District Legislative Analysis Summary – SB 888 (Allen) Bill Version: As introduced on January 20, 2016 GSA

environmental and public health agencies at the state and local level about the status of well repair and odor abatement activities.

On November 5, 2015, the SCAQMD issued a Notice to Comply to SoCalGas and on November 23, 2015, SCAQMD issued a Notice of Violation (NOV) alleging an ongoing public nuisance pursuant to H&S Code §41700 and District Rule 402. After lengthy testimony and in response to a petition filed by the SCAQMD on December 10, 2015, the SCAQMD Hearing Board on January 23rd ordered SoCalGas to take immediate action to minimize odors and air pollution from the massive gas leak near Porter Ranch. Further, on January 26, SCAQMD filed a complaint with the Los Angeles County Superior Court against the SoCalGas for creating a public nuisance.

As proposed by Supervisor Antonovich, the SCAQMD Governing Board passed Resolution 16-1 on January 8, 2016. It urges that Governor Edmund G. Brown, Jr. request that funds obtained from the Southern California Gas Company for a greenhouse gas program to mitigate methane emissions be spent on measures to benefit the Porter Ranch community adversely impacted by those emissions, and the Southern California region to the extent that it is infeasible to conduct projects in Porter Ranch.

On January 11, Senators DeLeon, Pavley, Allen and Huff announced their legislative package in response to this incident, intending to address the state and region's public safety needs while recognizing the need for energy reliability.

Status: 1/28/2016 Referred to Committee on Governmental Organization and the Committee on Energy, Utilities, and Communications.

Specific Provisions:

- Would establish the Office of Emergency Services as the lead agency for emergency response to a leak of natural gas from a natural gas storage facility.
- Requires the Office of Emergency Services to coordinate among other state agencies the emergency response, public health and environmental assessment, monitoring, and long-term management and control of the leak.
- Requires the commission to deposit moneys from penalties assessed against a gas corporation in regards to a gas storage facility leak into the Gas Storage Facility Leak Mitigation Account.
- Moneys in this account shall be expended, upon appropriation by the Legislature, solely for direct emissions reductions in furtherance of the achievement of the greenhouse gas emissions limit.
- Prohibits a gas corporation from recovering any moneys paid for fines, penalties, or damages to residents, businesses, and other parties adversely affected by a gas storage facility leak through any rate increase approved by the CPUC. Require that those costs and expenses be paid for by the gas corporation and its shareholders.

South Coast Air Quality Management District Legislative Analysis Summary – SB 888 (Allen) Bill Version: As introduced on January 20, 2016 GSA

Impacts on SCAQMD's mission, operations or initiatives:

SB 888 is intended to ensure accountability and, should an incident similar to the Aliso Canyon Storage Facility leak happen again, provide for a coordinated and effective governmental response. To fully achieve the bills intended purpose to provide for a coordinated and effective emergency response, the bill should also re quire coordination with the local air districts. In addition, to maximize the benefit of expenditures from the Gas Storage Facility Leak Mitigation Account, expenditures should be prioritized to maximize criteria and toxic pollutant emission cobenefits.

Recommended Position: SUPPORT AND CONTINUE TO WORK WITH AUTHOR ON DETAILS INVOLVING AIR QUALITY AND SCAQMD OPERATIONS.

Introduced by Senator Allen (Coauthors: Senators De León and Pavley) (Coauthor: Assembly Member Wilk)

January 20, 2016

An act to add Section 8585.01 to the Government Code, and to add Section 972 to the Public Utilities Code, relating to gas corporations.

LEGISLATIVE COUNSEL'S DIGEST

SB 888, as introduced, Allen. Gas corporations: emergency management.

(1) Existing law creates, within the office of the Governor, the Office of Emergency Services which, under the Director of Emergency Services, coordinates disaster response, emergency planning, emergency preparedness, disaster recovery, disaster mitigation, and homeland security activities.

This bill would establish the Office of Emergency Services as the lead agency for emergency response to a leak of natural gas from a natural gas storage facility. The bill would require the Office of Emergency Services to coordinate among other state agencies the emergency response, public health and environmental assessment, monitoring, and long-term management and control of the leak.

(2) Under existing law, the Public Utilities Commission has regulatory authority over public utilities, as defined. The Public Utilities Act requires the commission to investigate the cause of all accidents occurring upon the property of any public utility, or directly or indirectly arising from or connected with its maintenance or operation, resulting in loss of life or injury to person or property and requiring, in the judgment of the commission, investigation by it, and authorizes the commission to make any order or recommendation with respect to the

investigation that it determines to be just and reasonable. The act provides that any public utility that violates any provision of the California Constitution or the act, or that fails or neglects to comply with any order, decision, decree, rule, direction, demand, or requirement of the commission, where a penalty has not otherwise been provided, is subject to a penalty of not less than \$500 and not more than \$50,000 for each offense. Existing law requires that any fine or penalty imposed by the commission and collected from a public utility be paid to the State Treasury to the credit of the General Fund.

This bill would require the commission to deposit moneys from penalties assessed against a gas corporation in regards to a gas storage facility leak into the Gas Storage Facility Leak Mitigation Account, which the bill would establish in the State Treasury. The bill would provide that moneys in this account shall be expended, upon appropriation by the Legislature, solely for direct emissions reductions in furtherance of the achievement of the greenhouse gas emissions limit, as specified. The bill would prohibit a gas corporation from recovering any moneys paid for fines, penalties, or damages to residents, businesses, and other parties adversely affected by a gas storage facility leak in any rate approved by the commission, and would require that those costs and expenses be paid for by the gas corporation and its shareholders. Because this provision of this bill would be a part of the act and because a violation of an order or decision of the commission implementing its requirements would be a crime, the bill would impose a state-mandated local program by creating a new crime.

(3) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

The people of the State of California do enact as follows:

1 SECTION 1. Section 8585.01 is added to the Government 2 Code, to read:

3 8585.01. The Office of Emergency Services shall be the lead

- 4 agency for emergency response to a leak of natural gas from a
- 5 natural gas storage facility. The Office of Emergency Services

1 shall coordinate among other state agencies the emergency

2 response, public health and environmental assessment, monitoring,3 and long-term management and control of the leak.

4 SEC. 2. Section 972 is added to the Public Utilities Code, to 5 read:

6 972. (a) The commission shall deposit any penalties assessed 7 against a gas corporation pursuant to this chapter in regards to a 8 gas storage facility leak into the Gas Storage Facility Leak 9 Mitigation Account, which is hereby established in the State

10 Treasury.

(b) Moneys in the account shall be expended, upon appropriationby the Legislature, subject to both of the following conditions:

(1) Moneys shall be expended solely for direct emissions
reductions in furtherance of the achievement of the greenhouse
gas emissions limit established pursuant to Part 3 (commencing
with Section 38550) of Division 25.5 the Health and Safety Code.
Moneys shall not be used for the purchase of allowances or offsets
otherwise authorized pursuant to Division 25.5 (commencing with
Section 38500) of the Health and Safety Code.

20 (2) Moneys from penalties assessed for a gas storage facility

21 leak shall be expended in a manner that, at a minimum, achieves

a reduction in greenhouse gases that exceeds the amount of thosegases emitted by that leak.

(c) A gas corporation shall not recover any moneys paid for
fines, penalties, or damages to residents, businesses, and other
parties adversely affected by a gas storage facility leak in any rate
approved by the commission. Those costs and expenses shall be
paid for by the gas corporation and its shareholders.

29 SEC. 3. No reimbursement is required by this act pursuant to

30 Section 6 of Article XIIIB of the California Constitution because 31 the only costs that may be incurred by a local agency or school

32 district will be incurred because this act creates a new crime or

33 infraction, eliminates a crime or infraction, or changes the penalty

34 for a crime or infraction, within the meaning of Section 17556 of

35 the Government Code, or changes the definition of a crime within

36 the meaning of Section 6 of Article XIII B of the California

37 Constitution.

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ATTACHMENT 4

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

LEGISLATIVE REPORT FROM HOME RULE ADVISORY GROUP MEETING OF DECEMBER 16, 2015

HRAG members present: Dr. Joseph Lyou, Chairman Jill Whynot, SCAQMD Chris Gallenstein, CARB (participated by phone) Curt Coleman, Southern California Air Quality Alliance Sue Gornick, WSPA Jayne Joy, Eastern Municipal Water District (participated by phone) Bill LaMarr, California Small Business Alliance Rongsheng Luo, SCAG (participated by phone) Art Montez, AMA International Diane Moss, Renewables 100 Policy Institute Terry Roberts, American Lung Association of California David Rothbart, Los Angeles County Sanitation Districts Larry Rubio, Riverside Transit (participated by phone) Larry Smith, Cal Portland Cement TyRon Turner, WCAY

Others: Mark Abramowitz (Board Consultant to Dr. Lyou); Earl Elrod (Board Consultant to Mayor Yates); Rita Loof (RadTech); Noel Muyco (SoCalGas); and Susan Stark (Tesoro).

SCAQMD Staff: Philip Crabbe, Jill Whynot, Bill Wong, and Marilyn Traynor

LEGISLATIVE UPDATE

Philip Crabbe reported that there was no Legislative Committee meeting in December and that the Legislature will be back in session on January 4, 2016.

Discussion

In response to a question by Mr. Coleman, the HRAG had the following discussion on the Governor's Transportation Plan, which relates to the Special Legislative Session on Transportation: The Governor's plan included taxes, fees, and cap-and-trade funding amounting to approximately \$3.6 billion in total. Democrats want the total amount increased to \$6 billion, and the Republicans want the amount increased to \$6.6 billion. There is little likelihood that a deal will be reached in the near term.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

LEGISLATIVE REPORT FROM HOME RULE ADVISORY GROUP MEETING OF JANUARY 20, 2016

HRAG members present: Dr. Joseph Lyou, Chairman Jill Whynot on behalf of Dr. Philip Fine, SCAQMD Elizabeth Adams, EPA (participated by phone) Curt Coleman, Southern California Air Quality Alliance Chris Gallenstein, CARB (participated by phone) Sue Gornick, WSPA Javne Joy, Eastern Municipal Water District (participated by phone) Bill LaMarr, California Small Business Alliance Rongsheng Luo, SCAG (participated by phone) Art Montez, AMA International Terry Roberts, American Lung Association of California David Rothbart, Los Angeles County Sanitation Districts Larry Rubio, Riverside Transit (participated by phone) Larry Smith, Cal Portland Company TyRon Turner, Dakota Communications

Others: Mark Abramowitz (Board Consultant to Dr. Lyou); David Czamanske (Board Consultant to Councilmember Michael Cacciotti; Ron Ketcham (Board Consultant to Mayor Larry McCallon); Rita Loof (RadTech); and Susan Stark (Tesoro).

SCAQMD Staff: Philip Crabbe, Bill Wong, and Marilyn Traynor

LEGISLATIVE UPDATE

Philip Crabbe reported on the following items that were discussed at the Legislative Committee meeting on January 15, 2016.

<u>Federal</u>

SCAQMD staff and Governing Board member Judy Mitchell met with key members of Congress in Washington, D.C. to outline SCAQMD's needs and priorities. Meetings were held with various elected officials or their staff, including the following: U.S. Senator Dianne Feinstein and U.S. Representatives Tony Cardenas, Janice Hahn, Grace Napolitano, and Loretta Sanchez. It was reported that with the budget discussions about to begin and the nominating sessions in July there is little hope for a large agenda this Congressional session. Also as part of this trip, at the Transportation Research Board's annual meeting, SCAQMD hosted a panel on Zero Emission Freight. Meetings were also held with key House appropriations staff and other key environmental staff in the Administration.

<u>State</u>

In response to the Aliso Canyon Porter Ranch methane leak, Senate leadership announced a legislative package that would include: (1) a moratorium on new injections at the site pending a

determination that it would not pose a risk to the public; (2) ensuring that the polluters, not the public, pay for damages; (3) establishing a single state government point of accountability for future leaks; (4) prohibiting the California Public Utilities Commission from allocating any Aliso Canyon costs to rate payers; (5) increasing inspections and updating health and safety measures; and (6) establishing targets to achieve a 50% reduction in black carbon emissions and a 40% reduction in methane emissions.

The following new bills will be tracked by SCAQMD:

AB 742 (Gallagher)

This bill would prohibit CARB from enforcing a regulation that restricts emissions from in-use diesel-fueled vehicles until CARB receives a completed comprehensive study by an independent private firm of the safety of any particulate matter filters required to be installed on affected vehicles.

AB 550 (Waldron)

This bill would allow owners of certain motor vehicles that are subject to the Smog Check Program to pay a \$200 smog abatement fee in lieu of passing a smog test.

All two-year bills must be heard and must be passed out of their house of origin by January 31, 2016. The deadline for introducing new legislation for this session is February 19, 2016.

The newly elected Speaker, Anthony Rendon, will transition to the position in March. Speaker Rendon has nine years left in the Assembly, which gives him the opportunity to be the longest serving speaker since Willie Brown.

The 2016-17 proposed budget was released by Governor Brown on January 7, 2016. The proposal reflects his efforts to balance fiscal restraint while meeting California's growing needs of the state. Key elements of the proposal are:

- \$122.6 billion General Fund budget.
- \$36 billion over the next decade to improve the maintenance of highways and roads, expand public transit, and improve critical trade routes.
- A \$3.1 billion Greenhouse Gas Cap and Trade expenditure plan.
 - Includes this year's funding and the remaining funding from last year that was not allocated.
 - 10% of these funds to be spent within disadvantaged communities and 25% of the revenues to projects that benefit disadvantaged communities.
 - 60%, or \$1.2 billion, of the projected auction proceeds are continuously appropriated to support public transit, sustainable communities, and high-speed rail.
 - \$1 billion for the following programs that reduce emissions in the transportation sector:
 - \$500 million for the Low Carbon Transportation program
 - \$400 million for the intercity rail capital program
 - \$100 million for the Low Carbon Road Program
 - \$25 million for the Alternative and Renewable Fuel and Vehicle Technology Program

- \$100 million for the Transformational Climate Communities Program, which focuses on the top 5% of disadvantaged communities.
- o \$100 million to expand waste management infrastructure
- o \$150 million for water conservation and restoration of habitats.

Discussion

Mr. Smith asked about AB 550. Mr. Crabbe stated that it is unclear what the bill's chances are for moving forward. Mr. Montez had questions about the cap and trade investment fund and the budgetary proposal for expenditures. Dr. Lyou asked that staff at a future HRAG meeting provide a report/presentation that discusses how much money was collected by the state, how the money was spent, and how the Governor and Legislature propose to spend any remaining balance. Mr. LaMarr expressed concern that small businesses never receive any of these funds. Dr. Lyou noted that additional information on the cap and trade program can be found on ARB's website (http://www.arb.ca.gov).



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 32

REPORT: Mobile Source Committee

SYNOPSIS: The Mobile Source Committee met on Friday, February 19, 2016. Following is a summary of that meeting. The next Mobile Source Committee meeting is scheduled for Friday, March 18, 2016 at 9:00 a.m.

RECOMMENDED ACTION: Receive and file.

Dr. Clark E. Parker, Sr., Chair Mobile Source Committee

PMF:afm

Attendance

Committee Chair Dr. Clark E. Parker, Sr. attended via teleconference. Committee Members Ben Benoit, Dr. Joseph Lyou, and Larry McCallon attended at SCAQMD headquarters. Committee Member Judith Mitchell listened by teleconference, but did not participate due to the location not being publicly noticed. Committee Member Shawn Nelson was absent. Dr. Parker called the meeting to order at 9:02 a.m.

ACTION ITEMS:

1) Authorize Staff to Petition U.S. EPA to Adopt Lower On-Road Heavy-Duty Engine Exhaust Emission Standards for NOx

Barbara Baird, Chief Deputy Counsel presented staff's request for authorization to petition U.S. EPA to adopt lower NOx emission standards for heavy-duty trucks. Ms. Baird reviewed the importance of heavy-duty trucks for NOx emissions in the South Coast Air Basin. CARB is planning to adopt a .02 g/bhp-hr NOx standard for trucks sold in California. But most of the emissions from heavy-duty trucks in the Basin come from trucks purchased in other states. Therefore a CARB standard alone will not come close to meeting the region's needs for attainment in 2023 and 2031. A nationwide standard would be much more effective. The federal Administrative

Procedure Act allows any person to petition a federal agency for a rulemaking. The Clean Air Act requires U.S. EPA to give motor vehicle manufacturers four years from the time a new standard is promulgated to begin selling vehicles meeting that standard. So if U.S. EPA adopts a new standard in 2017, it will not be implemented until 2021. This is too late to help significantly for 2023, but could achieve about a 50% reduction in heavy- duty truck NOx emissions by 2031, assuming normal fleet turnover. These benefits could be increased through accelerated retirement and incentive programs. Staff requested the Committee to recommend that staff be authorized to petition U.S. EPA to adopt a nationwide .02 g/bhp-hr standard for heavy-duty trucks by December 2017.

Dr. Parker asked whether SCAQMD has filed such a petition before. Ms .Baird explained that in 2013, SCAQMD petitioned U.S. EPA to adopt a NOx standard for large ocean-going vessels entering the "Emissions Control Area" or "ECA" surrounding the U.S., in the event Russia was successful in setting aside the ECA that had been imposed by an arm of the United Nations. Since the ECA was not set aside, U.S. EPA did not need to rule on the petition. Dr. Lyou noted that the Clean Air Act provision is technology-forcing, but asked staff whether trucks meeting the recommended standards could be developed in the time frame suggested. Dr. Matt Miyasato assured the Committee that the trucks could be developed.

There were no public comments.

Moved by Benoit; seconded by Lyou; unanimously approved.

Ayes:B. Benoit, McCallon, Lyou, ParkerNoes:NoneAbsent:Mitchell, Nelson

2) Approve Implementation of Three Additional Incentive Programs, Amend an Existing Contract with Mean Green Products, LLC, Expand Implementation Areas, and Allocate Funds for Implementation of U.S. EPA's Targeted Air Shed Grant

Susan Nakamura, Director of Strategic Initiatives, presented staff's recommendation on incentive programs for U.S. EPA's Targeted Air Shed Grant. Committee members Ben Benoit and Dr. Clark Parker asked about previous funding efforts for school buses. Fred Minassian, Assistant Deputy Executive Officer, explained that SCAQMD has provided many millions of dollars in funding to help school districts throughout the South Coast Basin replace older buses. He added that Los Angeles Unified School District (LAUSD) had requested assistance on a large number of pre-1987 bus replacements but the request exceeded available funding. Dr. Lyou inquired how, with SCAQMD fleet rules, could LAUSD still have so many pre-1987 buses. Henry Hogo responded that the fleet rule only applies to new purchases. Dr. Parker said that he had concerns about utilizing the funds for buses when EJ communities are interested in PEV charging systems. He stated that we need to think about how we are spending the grant money and direct additional funds to PEV systems. Executive Officer Dr. Barry Wallerstein acknowledged Dr. Parker's comments and added that there have been extensive negotiations with U.S. EPA on how the money is to be spent and that spending the funds in a timely manner was imperative. Dr. Parker added that the SCAQMD should explore funding the full cost of PEV projects as EJ communities are likely to be unable to afford paying 30 to 40 percent of project costs. Dr. Lyou added that when expanding the projects beyond Boyle Heights, San Bernardino and Western Riverside County, Orange County EJ communities should be considered to provide dispersion of programs to the four counties. Dr. Wallerstein committed to adding Orange County as the next priority for incentive programs.

There were no public comments.

Moved by Lyou; seconded by Benoit; unanimously approved.

Ayes:B. Benoit, McCallon, Lyou, ParkerNoes:NoneAbsent:Mitchell, Nelson

3) Issue three Program Announcements for the 2016 Lawn Mower Exchange Program

Vasken Yardemian, Senior Staff Specialist, proposed to extend the Lawn Mower Exchange Program by offering similar incentives in fall of 2016 by issuing three Program Announcements to solicit competitive bids from manufacturers of cordless battery-electric lawn mowers at the lowest possible price as well as from licensed scrappers and support service providers to physically handle mowers at the lawn mower exchange events. The Committee voted to approve these Program Announcements.

There were no public comments.

Moved by Benoit; seconded by McCallon; unanimously approved.

Ayes:Parker, Lyou, B. Benoit, McCallonNoes:NoneAbsent:Mitchell, Nelson

INFORMATIONAL ITEM:

4) Rule 2202 On-Road Motor Vehicle Mitigation Options Annual Update 2014-2015

Carol Gomez, Planning and Rules Manager, presented an update for calendar years 2014-2015 for Rule 2202 – On-Road Motor Vehicle Mitigation Options. Rule 2202 requires employers with 250 or more employees to implement an emissions reduction program to reduce mobile source emissions generated by employee commutes during peak hours. Over 1,300 worksites were regulated by this program.

Employers may select one of three program options to comply with Rule 2202: an Employee Commute Reduction Program (ECRP), Emissions Reduction Strategies (ERS), or an Air Quality Investment Program (AQIP). The ECRP requires employers to develop and implement an employee trip reduction program to assist in reaching an average vehicle ridership (AVR) goal. The ERS requires employers to surrender mobile source emission reduction credits; and the AQIP requires payment into a fund which the SCAQMD utilizes to fund mobile source emission reduction projects, such as the leaf blower exchange program. Employer participation in the compliance options and tons/day of emissions reduced was as follows:

2014

- 37% ECRP, 58% ERS, and 5% AQIP
- 2.04 VOC, 1.42 NOx, and 16.15 CO

2015

- 37% ECRP, 56% ERS, and 7% AQIP
- 1.79 VOC, 1.26 NOx, and 14.81 CO

In addition to emission reductions, the Rule 2202 program reduced 3 million vehicle miles traveled (VMT) for both 2014 and 2015; funded the leaf blower exchange program; and retired emission credits that were surrendered from the ERS option.

Dr. Lyou noted that the emission reductions were lower in 2015 than in 2014. Ms. Gomez responded that it is a result of cars becoming cleaner with time.

There were no public comments.

WRITTEN REPORTS:

- 5) Rule 2202 Activity Report The report was received as submitted.
- 6) Monthly Report on Environmental Justice Initiatives CEQA Document Commenting Update

The report was received as submitted.

OTHER BUSINESS:

None.

PUBLIC COMMENT: None.

The meeting was adjourned at 9:54 a.m.

Attachment Attendance Roster

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT MOBILE SOURCE COMMITTEE MEETING Attendance Roster – February 19, 2016

NAME	AFFILIATION
Dr. Clark E. Parker (teleconference)	SCAQMD Governing Board
Dr. Joseph Lyou	SCAQMD Governing Board
Councilmember Ben Benoit	SCAQMD Governing Board
Mayor Larry McCallon	SCAQMD Governing Board
Board Consultant Mark Abramowitz	SCAQMD Governing Board (Lyou)
Board Assistant David Czamanske	SCAQMD Governing Board (Cacciotti)
Board Assistant Chung Liu	SCAQMD Governing Board (Mitchell)
Board Assistant Ron Ketcham	SCAQMD Governing Board (McCallon)
Board Assistant Ruthanne Taylor Berger	SCAQMD Governing Board (Benoit)
Curtis Coleman	SoCal Air Quality Alliance
Noel Muyco	SoCal Gas
Bill Quinn	CCEEB
David Rothbart	Los Angeles County Sanitation Districts
Erin Sheehy	Environmental Compliance
Susan Stark	Tesoro
Tara Tisopulos	Orange County Transportation Authority
Lee Wallace	SoCal Gas
Philip Fine	SCAQMD Staff
Barbara Baird	SCAQMD Staff
Henry Hogo	SCAQMD Staff
Fred Minassian	SCAQMD Staff
Matt Miyasato	SCAQMD Staff
Jill Whynot	SCAQMD Staff
Sam Atwood	SCAQMD Staff
David De Boer	SCAQMD Staff
Jo Kay Ghosh	SCAQMD Staff
Carol Gomez	SCAQMD Staff
Lane Garcia	SCAQMD Staff
Kathryn Higgins	SCAQMD Staff

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT MOBILE SOURCE COMMITTEE MEETING Attendance Roster – February 19, 2016

Michael Krause	SCAQMD Staff
Ian MacMillan	SCAQMD Staff
Chris Marlia	SCAQMD Staff
Michael Morris	SCAQMD Staff
Susan Nakamura	SCAQMD Staff
Dean Saito	SCAQMD Staff
Antonio Thomas	SCAQMD Staff
Kim White	SCAQMD Staff
Vasken Yardemian	SCAQMD Staff



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 33

REPORT: Stationary Source Committee

SYNOPSIS: The Stationary Source Committee met Friday, February 19, 2016. Following is a summary of that meeting.

RECOMMENDED ACTION: Receive and file.

Ben Benoit, Chair Stationary Source Committee

MN:am

Attendance

The meeting began at 10:30 a.m. In attendance at SCAQMD Headquarters were Committee Chair Ben Benoit and Committee Members Dr. Joseph Lyou and Larry McCallon. Committee Member Judith Mitchell attended via videoconference. Absent were Committee Members Janice Rutherford and Shawn Nelson.

ACTION ITEMS

Dr. Lyou recommended adding "Comments to the Air Resources Board Regarding Mitigating Methane Emissions from the Aliso Canyon Gas Leak" to the agenda as an urgency item for the Committee meeting. The need for action came to the attention of the SCAQMD after the posting of the agenda and it was necessary to take urgent action because the CARB Board held a public meeting on February 18, 2016 and is asking for input regarding a draft plan required under Governor Brown's Executive Order for how funds that will be received from the Southern California Gas Company (So Cal Gas) to mitigate methane emissions from the Aliso Canyon Gas Leak will be spent. The plan must be developed by CARB by March 31, 2016, which necessitates this item being discussed by the Stationary Source Committee and the Board at the first available opportunity. It is anticipated that a substantial amount of funding will be received and it is important to emphasize the Board's priority that mitigation benefits occur in and near the community that has been so heavily impacted by this situation. Dr. Lyou introduced

a motion to add this item to the agenda as an urgency item and was seconded by Mayor McCallon and passed unanimously by all other Committee Members present.

Dr. Barry Wallerstein, Executive Officer, distributed a portion of the presentation given by CARB staff to their Board at the February 18, 2016 meeting and explained that SoCal Gas committed to the Governor that they would mitigate the climate impacts from the gas leak. Dr. Wallerstein testified at the CARB Board meeting and presented the January 2016 SCAQMD Board Resolution stressing the need to spend mitigation funds in Porter Ranch or nearby communities, and if not possible to do so, then in Southern California. The present proposed draft criteria for such projects are that they occur in California. Co-benefits are a criteria, but are not one of the primary considerations.

Staff is preparing a comment letter that will go to the Board at their March 2016 meeting. Other areas of comments will be directed towards using the best scientific information available to assess the climate impacts, including the atmospheric lifetime of methane.

Dr. Lyou asked what areas staff needed direction on, and Dr. Wallerstein replied that there are issues such as using the funds for immediate, tangible projects or longer term technology development and demonstration. Dr. Lyou stated his preference for immediate pollutant reductions, such as black carbon, which would provide greenhouse gas and toxic reductions. Councilmember Mitchell asked how different lawsuits would be handled. Barbara Baird, Chief Deputy Counsel, responded that there was a process underway by the courts to determine how to handle this complex litigation, and the different lawsuits may be consolidated.

Dr. Wallerstein commented that Supervisor Michael Antonovich has consistently advocated that all funding be used to benefit the Porter Ranch community and nearby communities.

Approved as recommended by the following vote:

Ayes:Benoit, Mitchell, McCallon, LyouNoes:NoneAbsent:Nelson and Rutherford

1. Annual RECLAIM Audit Report for Compliance Year 2014

Mohsen Nazemi, Deputy Executive Officer for Engineering and Compliance, gave a brief description of the RECLAIM Audit Report for Compliance Year 2014, which is currently on the agenda for the Board's March 4, 2016 meeting. He pointed out that some of the results he was discussing were preliminary in that the audit of thirty RECLAIM facilities is ongoing and that the report that will be presented to the

Board at the March Board Meeting will include final data for all RECLAIM facilities.

The 2014 Compliance Year covers January 1, 2014 through June 30, 2015—the twenty-first year of the RECLAIM program. The findings in the annual report are consistent with those for prior years. The RECLAIM universe had a net decrease of three active facilities (with four facilities dropping out of and one entering the RECLAIM program), bringing the total number of facilities in the program to 272 as of June 30, 2015. RECLAIM met its aggregate emission goals and the individual facility allocation compliance rates were very high. Compliance Year 2014 NOx emissions were 23% below aggregate Allocations. Compliance Year 2014 SOx emissions were 23% below aggregate Allocations.

The Board periodically reduces ("shaves") RTC holdings to ensure that RECLAIM facilities comply with Best Available Retrofit Control Requirements. NOx RTC holdings were shaved by 22.5% with the reductions phased in from 2007 to 2011, then SOx RTC holdings were shaved by 48.4% with the phased implementation commencing in 2013 and scheduled to be completed in 2019, and a second NOx shave commenced in 2016 and is scheduled for completion in 2022, resulting in an additional 45.3 % NOx reduction.

Over \$1.34 billion in RTC trades have occurred since RECLAIM began in 1994, with \$197.1 million traded in Calendar Year 2015. The total amount traded in Calendar Year 2015 represented an 89% increase over the prior year (\$104.2 million). The RTC prices were higher than in previous years; however, the average prices for discrete year and infinite year NOx and SOx RTCs were all well below program review thresholds.

Although four facilities shut down during the compliance year, RECLAIM facilities experienced an overall gain in employment of 0.26%. None of the four shutdown facilities cited RECLAIM as contributing to their decisions to shut down. RECLAIM also met all other performance criteria. Federal New Source Review offset ratios and State No Net Increase in emissions requirements were met. There was no significant shift in emissions from winter to summer, and no evidence of increased health risk due to RECLAIM.

Mr. Nazemi concluded by mentioning that investors, who are RTC holders that do not operate RECLAIM facilities, remained as strong active participants in the RECLAIM market during calendar year 2015; at the end of the year investors held 1.9% of IYB NOx and 3.3% of IYB SOx. He asked that the Stationary Source Committee recommend that the Annual RECLAIM Audit Report for 2014 Compliance Year be presented to the Board at the March 4, 2016 meeting for approval.

There were no questions or comments regarding this item from the public. Dr. Lyou noted that the goal is for all facilities to comply but that every year there are a few facilities that do not comply with the requirement to reconcile their RECLAIM emissions with their RTC holdings and asked if staff needs additional resources to bring the remaining facilities into compliance. Mr. Nazemi responded that, for reasons such as staffing changes or use of inappropriate emission calculations, there continue to be facilities that are not completely clear on the required calculation methodologies and that some facilities simply fail to reconcile by the due date for each quarter. Dr. Wallerstein also explained that the RECLAIM compliance rate is very high, and that he wishes the compliance rates for other programs were as high. Dr. Lyou asked how staff compares toxics impacts and NSR offset ratios under RECLAIM to what they would be under command and control in the absence of RECLAIM. Mr. Nazemi explained that the federal and state new source review programs require certain offset ratios and staff demonstrates that RECLAIM achieves compliance with those ratios. He also explained that RECLAIM facilities are not exempt from any toxics rules and are subject to toxics analyses as though they were not in RECLAIM. Dr. Lyou also asked about RTC brokers' contribution to investors' RTC holdings. Mr. Nazemi explained that brokers facilitate trades but do not actually hold RTCs so they are not considered investors.

Moved (Benoit); seconded (Lyou); and approved as recommended by the following vote:

Ayes:Benoit, Mitchell, McCallon, LyouNoes:NoneAbsent:Nelson and Rutherford

2. Home Rule Advisory Group Membership

The Stationary Source Committee approved the request from Dr. Lyou to appoint Morgan Wyenn to replace Diane Moss, and the request from Bill Quinn to appoint Janet Whittick as his alternate to the Home Rule Advisory Group.

Moved (McCallon); seconded (Lyou); and approved as recommended by the following vote:

Ayes:Benoit, Mitchell, McCallon, LyouNoes:NoneAbsent:Nelson and Rutherford

3. Approve SCAQMD Comments on U.S. EPA's Proposed Amendments to Regulation Governing U.S. EPA Procedures for Investigating Title VI Complaints

Ms. Baird presented draft comments on U.S. EPA's proposed amendments to its regulations for investigating Title VI complaints. Title VI is part of the Civil Rights Act of 1964 and prohibits agencies receiving federal funding from discriminating in any of their programs on the basis of race, color, or national origin. U.S. EPA is proposing to amend its regulations governing investigations to eliminate specific deadlines and replace them with a requirement to investigate "promptly." The intent is to allow U.S. EPA to devote appropriate time and resources to each case, especially the more complex investigations. Ms. Baird explained that the draft comments recommended that instead of eliminating deadlines entirely, U.S. EPA should extend the deadlines that it feels are unrealistic. She noted that a requirement to act "promptly" would be difficult to enforce, and provide unacceptable uncertainty for complainants, agencies receiving funding, and affected permit applicants. She reviewed specific recommended revised deadlines. Councilmember Mitchell recommended that U.S. EPA include in its regulations a provision that U.S. EPA may allow a complainant to amend their complaint to cure any defects, but if this was not successfully done within 30 days, the complaint would be dismissed. Councilmember Mitchell believed staff's recommended deadlines were reasonable. Councilmember Mitchell's recommendation was included in the motion to approve the staff recommendation.

Moved (Lyou); seconded (Mitchell); and approved as recommended by the following vote:

Ayes:Benoit, Mitchell, McCallon, LyouNoes:NoneAbsent:Nelson and Rutherford

INFORMATIONAL ITEMS

4. Proposed Guidelines for Disbursement and Tracking of Funds Received Pursuant to Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption

Tracy Goss, Planning and Rules Manager, presented an overview of recent updates to the Proposed Guidelines for Disbursement and Tracking of Funds Received Pursuant to Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption, as a follow-up to the January 22, 2016 Committee meeting. The briefing included a summary of the input from the working group meeting held January 26, 2016, and reiterating the Committee's previous direction for distribution of funding goal of 50% based on a 10 mile radius proximity and 50% for environmental justice (EJ) areas located within a 15 mile radius.

Dr. Lyou clarified that the proximity and EJ criteria refer to the location of the proposed air quality improvement projects and not to the location of the project managers or sponsors. He further indicated that ongoing disbursement of funding under this rule should be transparent, and suggested a web page to track projects and implementation as a possible mechanism. He also encouraged that such a system be developed early, prior to issuing requests for proposals.

Mayor McCallon initiated a discussion about the nature of the electrical generating facility (EGF) projects and whether the proximity criteria was representative of the impacted communities as directed by the rule. Mohsen Nazemi and Dr. Philip Fine responded that the air quality impacts from EGF projects under Rule 1304.1 would vary and could represent a reduction in actual emissions if the old and new equipment operated the same amount of time due to the new units being cleaner and more efficient. For EGF projects with a net emissions increase, some pollutants would have regional impacts as ozone precursors, whereas for PM2.5 and NO2 emissions, more localized impacts would be expected similar to the previously proposed six mile proximity criteria that was based on state law (AB 1318) and used by the California Energy Commission (CEC) as part of their California Environmental Quality Act (CEQA) assessment. Dr. Wallerstein indicated that while the proximity criteria can serve the purpose of prioritizing funding to directly impacted areas, there is also a grid reliability component that may be associated with EGF project location, which may also have an effect on funding availability.

Mayor McCallon asked if funding air quality improvement projects for EJ areas outside the radius in the recommended guidelines could be done if the number of qualifying proposals under an RFP were limited, and whether criteria to do this could be made part of the proposed guidelines rather than as subsequent proposals. Dr. Wallerstein indicated that the option could be made available, although the issuance of a subsequent RFP may not have the desired result of identifying qualifying projects outside of the proximity criteria – instead indicating that funding of existing SCAQMD programs that may target EJ areas outside of the initial criteria could be more effective and not require additional direction from the Board if incorporated into the proposed guidelines.

Public comment was received from City of Huntington Beach Councilmember Barbara Delgleize, who requested that disbursement of funding be limited to projects located within the county where the EGF projects are located, that EJ area considerations be based on use of the CalEnviroScreen tool regardless of air quality, that Orange County in particular should be allowed to recover funds because it is a net contributor with respect to state revenue, and that the Oakview Community specifically should be identified as an EJ area, although it does not currently qualify under the proposed SCAQMD EJ definition. Dr. Lyou clarified that the Oakview Community is within the condition for proximity and would therefore qualify for funding independent of any EJ criteria under the current proposal.

- 5. Rule 1147 Draft Technology Assessment & RFP for Third Party Review Joe Cassmassi, Planning and Rules Director, presented a summary of the Draft Rule 1147 Technology Assessment document, comments received on the draft document at the February 17, 2016 Rule 1147 Task Force meeting, and a Request for Proposals for the review of the draft document by a third party contractor. Mr. Bill Lamarr of the Small Business Alliance requested that stakeholders have an opportunity to meet with the contractor prior to finalizing the technology assessment. Staff assured Mr. Lamarr that stakeholders would be provided the opportunity to present their questions and concerns to the reviewer. Mr. Anthony Endres from Fluid Dynamics, Inc. stated the draft document was a thorough review of technology but had concerns with the cost effectiveness analysis and recommended to use a single cost effectiveness methodology.
- 6. BACT and BARCT Review for Oil and Gas Production Facilities Due to time constraints, Committee Chair recommended that this item be heard at the March Committee meeting.

WRITTEN REPORTS

All written reports were acknowledged by the Committee.

PUBLIC COMMENTS

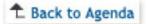
There were no Public Comments.

The next Stationary Source Committee meeting is scheduled for March 18, 2016. The meeting was adjourned at 11:50 a.m.

Attachment Attendance Roster

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE COMMITTEE February 19, 2016 ATTENDANCE ROSTER (Voluntary)

NAME	AFFILIATION
Councilmember Ben Benoit	SCAQMD Governing Board Member
Councilmember Judith Mitchell (videoconference)	SCAQMD Governing Board Member
Mayor Larry McCallon	SCAQMD Governing Board Member
Dr. Joseph Lyou	SCAQMD Governing Board Member
Board Consultant Andrew Silva	SCAQMD Governing Board (Rutherford)
Board Consultant Chung Liu	SCAQMD Governing Board (Mitchell)
Board Consultant David Czamanske	SCAQMD Governing Board (Cacciotti)
Barry Wallerstein	SCAQMD staff
Barbara Baird	SCAQMD staff
Philip Fine	SCAQMD staff
Mohsen Nazemi	SCAQMD staff
Jill Whynot	SCAQMD staff
Joe Cassmassi	SCAQMD staff
Al Baez	SCAQMD staff
Dann Luong	SCAQMD staff
Tracy Goss	SCAQMD staff
Matt Miyasato	SCAQMD staff
Kim White	SCAQMD staff
Barbara Delgeize	City of Huntington Beach
Bill Lamarr	California Small Business Alliance
David Rothbart	Los Angeles County Sanitation Districts
Susan Stark	Tesoro
Sue Gornick	Western States Petroleum Association
Rita Loof	RadTech
Peter Whittingham	Curt, Pringle & Assoc.
Erin Sheehy	Environmental Compliance Solutions, Inc.



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 34

REPORT: Technology Committee

SYNOPSIS: The Technology Committee met on February 19, 2016. Major topics included Technology Advancement items reflected in the regular Board Agenda for the March Board meeting. A summary of these topics with the Committee's comments is provided. The next Technology Committee meeting will be held on March 18, 2016.

RECOMMENDED ACTION: Receive and file.

John J. Benoit Technology Committee Chair

MMM:pmk

Attendance: Supervisor John J. Benoit, Councilmember Joe Buscaino and Councilmember Judith Mitchell participated by videoconference. Mayor Larry McCallon and Councilmember Dwight Robinson were in attendance at SCAQMD headquarters. Supervisor Janice Rutherford was absent due to a conflict with her schedule.

MARCH BOARD AGENDA ITEMS

1. Adopt Resolution Recognizing Funds and Accepting Terms and Conditions for FY 2015-16 Carl Moyer Program Award, Issue Program Announcements for Carl Moyer Program and SOON Provision, Execute and Amend Contracts, and Amend SOON Provision Implementation Guidelines

These actions are to adopt a resolution recognizing up to \$26 million in Carl Moyer Program grant awards from CARB under SB 1107 with its terms and conditions for FY 2015-16 and to approve the release of Program Announcements for the FY 2015-16 "Year 18" Carl Moyer Program and SOON Provision to provide incentive funding for low-emitting on- and off-road vehicles and equipment. Additionally, these actions are to execute and amend contracts in the amount of \$570,799, comprised of \$542,300 from the Air Quality Investment Fund, Rule 2202 Program (27), and \$28,499 from the Carl Moyer Program SB 1107 Fund (32). Finally, this action is to approve amendments to the SOON Provision Implementation Guidelines.

Moved by Robinson; seconded by Buscaino; unanimously approved.

Ayes:Buscaino, McCallon, Mitchell, Robinson, BenoitNoes:NoneAbsent:Rutherford

2. Execute Contract to Cost-Share Alternative Fuel Station Expansion 📠

Ontario CNG Station, Inc. (Ontario CNG) is a comprehensive public access fueling facility located at a busy intersection adjacent to the Ontario International Airport and I-10 corridor. It is a conventional, continuously manned fueling station with a car wash and convenience store that provides petroleum- and bio-based and CNG fuels and is developing on-site-produced hydrogen fuel and electric vehicle charging. The significant CNG fueling demand at this location is currently supplied by a single compressor, placing a burden on its users which include school bus and long-haul goods movement vehicle operators. This action is to execute a contract with Ontario CNG in an amount not to exceed \$200,000 from the Clean Fuels Fund (31) to cost-share the expansion of the CNG station.

Staff presented a summary of the CNG station expansion project. Councilmember Robinson inquired about the source and availability of renewable natural gas (RNG), onsite storage and pricing of CNG and potential grants for other adjacent CNG stations. Staff responded that RNG is typically produced from landfills and bio wastes, and is readily available from local and out-of-state producers. Staff further clarified that "useable" Gasoline Gallon Equivalents is a unit of measure for cascade-type refueling stations. Lastly, staff indicated that other stations, such as the Clean Energy station, have received funding from the SCAQMD or MSRC.

Supervisor Benoit inquired about the frequency of these types of multi-fuel stations, and staff responded that some stations have a diversity of fuels, but not to the degree of the Ontario CNG LLC Station.

Moved by McCallon; seconded by Mitchell; unanimously approved.

Ayes:Buscaino, McCallon, Mitchell, Robinson, BenoitNoes:NoneAbsent:Rutherford

3. Establish Special Revenue Fund, Recognize and Transfer Funds, and Execute Contracts to Develop and Demonstrate Zero Emission Capable Drayage Trucks

SCAQMD received a \$23,658,500 award to develop and demonstrate zero emission drayage trucks under CARB's Low Carbon Transportation Greenhouse Gas Reduction Fund Investments, with a total project cost of \$40,122,470. Based on total match requirements, SCAQMD is providing \$6,001,531, partnering air districts are providing \$4,400,000 in cash and other project partners are providing \$6,062,439 in-kind. This action is to establish the GHG Reduction Projects Special Revenue Fund and recognize revenue upon receipt in the amount of \$28,058,500 into this Special Revenue Fund. This action is to also transfer SCAQMD's cost-share of \$6,001,531 from the Clean Fuels Fund (31) to the GHG Reduction Projects Special Revenue Fund and to execute contracts for the development and demonstration of zero emission drayage trucks.

Councilman Buscaino recused himself due to a campaign contribution from BYD Motors.

Councilmember Robinson inquired about the rationale behind the funding distributions between OEMs and commented on the effectiveness of the weight reduction measures used by Volvo on the drayage truck. Staff responded that one of the main criteria for the SCAQMD's proposed project was to engage major truck OEMs, rather than working with small vehicle integrators, to improve the prospects for commercializing the technologies to be demonstrated in this project, and the number of trucks was based on the original equipment manufacturer's (OEM's) proposals to the SCAQMD. Staff recognized that weight reductions are negligible relative to the potential payloads.

Supervisor Benoit inquired if the demonstration fleets will be making any payments to use these electric drayage trucks. Staff clarified that participating fleets will contribute in-kind resources, but will not provide cash contributions.

Committee Members Mitchell and Benoit complimented staff on a comprehensive proposal incorporating OEM's and other air districts' participation.

Moved by Mitchell; seconded by Robinson; passed by a 4-0 vote.

Ayes:	McCallon, Mitchell, Robinson, Benoit
Noes:	None
Abstention:	Buscaino
Absent:	Rutherford

4. Recognize Revenue and Appropriate Funds to Develop Low-Cost Sensor Network for Monitoring PM Emissions from Waste Disposal and Recycling Facility

SCAQMD and Rainbow Transfer/Recycling Inc. (Rainbow) have entered into a Stipulated Order for Abatement to resolve their dispute over application of Rule 410 and to achieve compliance with the Rule's enclosure requirement. Pursuant to the agreement set forth in the Stipulated Order for Abatement, Rainbow contributed \$40,000 to SCAQMD's General Fund for an air monitoring study to measure potential fugitive PM emissions from the facility using low-cost sensors. This action is to recognize \$40,000 in revenue into the General Fund and appropriate this amount to the Science & Technology Advancement Budget to support the development and implementation of a PM monitoring sensor network.

Councilmember Buscaino asked about the need for a study and why not just move forward and deploy the product. Staff responded that while the individual sensors have been tested and are available for deployment, the sensor network must be designed and assembled first and then deployed. The study is expected to last for six to twelve months, and staff have already initiated designing the network. It will be ready for deployment within the next few months.

Mayor McCallon asked if the 900 MHz wireless mesh network is being used by anyone in the area. Staff does not believe so; however, this pilot study will help assess whether there are any external interferences. Supervisor Benoit asked whether it was wireless; staff responded yes.

Councilmember Mitchell noted the NOVs/large fines incurred by the Rainbow Environmental Services dump and concurred that this was a good use of the sensors at their facility. Staff reminded everyone this is not an enforcement tool, but rather a diagnostic tool for the regulated entity to facilitate compliance.

Moved by Buscaino; seconded by McCallon; unanimously approved.Ayes:Buscaino, McCallon, Mitchell, Robinson, BenoitNoes:NoneAbsent:Rutherford

5. Authorize Acquisition of Four Advanced Technology Vehicles for SCAQMD's Alternative Fuel Vehicle Demonstration Program

SCAQMD tests and demonstrates new vehicles with low- and zero-emission technologies as they become available. This action is to purchase three Chevrolet Volts and one Toyota RAV4 EV that are in current use in the SCAQMD fleet and with carpool lane access stickers, prior to expiration of their leases. The total cost to the SCAQMD for these four vehicles will not exceed \$107,000 from the Clean Fuels Fund (31).

Moved by Mitchell; seconded by Robinson; unanimously approved.Ayes:Buscaino, McCallon, Mitchell, Robinson, BenoitNoes:NoneAbsent:Rutherford

6. Approve and Adopt Technology Advancement Office 2015 Clean Fuels Program Annual Report, 2016 Plan Update, and Resolution

Each year by March 31, the Technology Advancement Office must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year. Staff has reviewed the Clean Fuels Program with the Clean Fuels Advisory Group, the Technology Advancement Advisory Group and other technical experts. Additionally, the 2016 Clean Fuels Program Draft Plan Update was presented to the Technology Committee for review and comment at its October 16, 2015 meeting and included as an attachment to the Technology Committee report for the full Board. This action is to approve and adopt the final Technology Advancement Clean Fuels Program Annual Report for 2015 and 2016 Plan Update as well as the resolution finding that proposed projects do not duplicate any past or present programs.

Moved by Mitchell; seconded by Robinson; unanimously approved.Ayes:Buscaino, McCallon, Mitchell, Robinson, BenoitNoes:NoneAbsent:Rutherford

7. Other Business

There was no other business.

8. Public Comment Period

There was no public comment.

Next Meeting: March 18, 2016

Attachment Attendance

Attachment – Attendance

Councilmember Joe Buscaino (via videoconference)SCAQMD Governing Board Mayor Larry McCallon
Councilmember Judith Mitchell (via videoconference) SCAOMD Governing Board
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Councilmember Dwight RobinsonSCAQMD Governing Board
Mark AbramowitzBoard Consultant (Lyou)
Ron KetchamBoard Consultant (McCallon)
Marisa PerezBoard Consultant (Mitchell)
Mark TaylorBoard Consultant (Rutherford)
John Olvera, Principal Deputy District CounselSCAQMD
Matt Miyasato, STASCAQMD
Henry Hogo, STASCAQMD
Fred Minassian, STASCAQMD
Laki Tisopulos, STASCAQMD
Naveen Berry, STASCAQMD
Dean Saito, STASCAQMD
Phil Barroca, STASCAQMD
Brian Choe, STASCAQMD
Connie Day, STASCAQMD
Drue Hargis, STASCAQMD
Lisa Mirisola, STASCAQMD
Gregory Rowley, IMSCAQMD
Penny Shaw Cedillo, STASCAQMD
Pat Krayser, STASCAQMD
Danielle Robinson

Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 35

REPORT: Mobile Source Air Pollution Reduction Review Committee

SYNOPSIS:Below is a summary of key issues addressed at the MSRC's
meeting on February 18, 2016. The next meeting is scheduled for
Thursday, March 17, 2016, at 2:00 p.m., in Conference Room CC8.

RECOMMENDED ACTION: Receive and file.

Ben Benoit Alternate SCAQMD Representative on MSRC

MMM:HH:AP

Meeting Minutes Approved

The MSRC unanimously approved the minutes of its September 17 and October 15, 2015 meetings. Those approved minutes are attached for your information (*Attachments 1 and 2*).

Alternative Fuel Infrastructure Program

As part of the FYs 2014-16 Work Program, the MSRC allocated \$5.0 million for the implementation of new and expanded CNG and LNG refueling stations and modification of maintenance facilities to accommodate gaseous-fueled vehicles. A Program Announcement, #PA2015-12, was developed and released on May 1, 2015, with an open application period commencing that day and closing July 29, 2016. To date, the MSRC has awarded a total of \$250,000 to two applications. The MSRC approved two additional applications totaling \$117,000 as part of the FYs 2014-16 AB 2766 Discretionary Fund Work Program, as follows:

- a. A contract with Burrtec Waste & Recycling Services in an amount not to exceed \$100,000 for installation of a new limited access CNG fueling station; and
- b. A contract with Transit Systems Unlimited in an amount not to exceed \$17,000 for expansion of their existing limited access CNG fueling station.

These contract awards will be considered by the SCAQMD Board at its March 4, 2016 meeting.

Contract Modification Requests

The MSRC considered five contract modification requests and took the following actions:

- 1. For City of Monterey Park, Contract #ML14090, which provides \$225,000 to expand their CNG station, unanimously approved modification of their contract to reflect an amendment to the Compression Services Tariff agreement with Southern California Gas Company to include electrical upgrades and the installation of the City-purchased dispensing equipment in addition to the compression equipment.
- 2. For City of Long Beach, Contract #ML09036, which provides \$875,000 for the purchase of 35 heavy-duty natural gas vehicles, unanimously approved to substitute the purchase of CNG vehicles for the final 14 vehicles in the contract, in addition to a two-year no-cost term extension;
- 3. For San Bernardino Associated Governments (SANBAG), Contract #MS16086 (proposed), which provides \$800,625 to implement a new freeway service patrol (FSP) beat, unanimously approved to modify the FSP beat endpoints, extending the beat by approximately one and a half miles, in order to establish safer drop point locations and turn around points.
- 4. For County of Los Angeles Department of Public Works, Contract #ML05014, which provides \$204,221 for the Florence/Mills Avenue Signal Synchronization Project, unanimously approved a 21-month no-cost term extension, contingent upon advertising of the project for construction no later than September 2016. If condition is not met, the contract will terminate, and funds will revert back to the unallocated budget and become part of the next Work Program, as excess money from previous years.
- 5. For Riverside County Transportation Commission (RCTC), Contract #MS16080 (proposed), provides \$1,200,000 to implement rail and shuttle service for Coachella and Stagecoach Festivals. RCTC requested modification of the time frame for the Festivals' service to provide service for two years beginning in April 2017. The MSRC unanimously approved to continue this item to the March 17, 2016 MSRC meeting to allow for MSRC Chair's input.

The SCAQMD Board will consider the above contract modification for San Bernardino Associated Governments at its March 4, 2016 meeting.

Received and Approved Final Reports

The MSRC received and unanimously approved three final report summaries this month as follows:

1. Final Assembly, Inc., Contract #MS12031, which provided \$50,000 for the purchase of two medium-heavy duty vehicles;

- 2. Orange County Transportation Authority, Contract #MS12088, which provided \$125,000 to implement a Rideshare Incentives Program; and
- 3. Midway City Sanitary District, Contract #MS14074, which provided \$250,000 to construct a CNG station and facility modifications.

Contracts Administrator's Report

The MSRC's AB 2766 Contracts Administrator provides a written status report on all open contracts from FY 2004-05 through the present. The Contracts Administrator's Report for February, 2016 is attached for your information. (*Attachment 3*)

Attachments

Attachment 1 – Approved September 17, 2015 Meeting Minutes Attachment 2 – Approved October 15, 2015 Meeting Minutes Attachment 3 – February, 2016 Contracts Administrator's Report



MOBILE SOURCE AIR POLLUTION REDUCTION REVIEW COMMITTEE THURSDAY, SEPTEMBER 17, 2015 MEETING MINUTES

21865 Copley Drive, Diamond, Bar, CA 91765- Conference Room CC-8

MEMBERS PRESENT:

(Chair) Greg Pettis, representing RCTC Michael Antonovich, representing SCAQMD (via v/c) Ben Benoit (Alt.), representing SCAQMD Brad McAllester (Alt.), representing Los Angeles County MTA (via v/c) Dolores Roybal Saltarelli, representing Regional Rideshare Agency (via v/c) Erik White, representing California Air Resources Board Greg Winterbottom, representing OCTA

MEMBERS ABSENT:

(Vice Chair) Larry McCallon, representing SANBAG Michele Martinez, representing SCAG Steve Veres, representing LA County MTA

MSRC-TAC MEMBERS PRESENT:

(MSRC-TAC Vice Chair) Tanya Love, RCTC Dean Saito, representing SCAQMD

OTHERS PRESENT:

Earl Elrod, SCAQMD Board Asst (Yates) Ric Teano, OCTA

SCAQMD STAFF & CONTRACTORS

Ray Gorski, MSRC Technical Advisor-Contractor Henry Hogo, Asst. DEO/Science & Technology Advancement John Kampa, Financial Analyst Matt MacKenzie, MSRC Contracts Assistant Ana Ponce, MSRC Administrative Liaison Cynthia Ravenstein, MSRC Contracts Administrator Veera Tyagi, Senior Deputy District Counsel Rachel Valenzuela, MSRC Contracts Assistant Paul Wright, Audio-Visual Specialist

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CALL TO ORDER

• Call to Order

MSRC Chair Greg Pettis called the meeting to order at 2:01 p.m. Roll call was taken. The following members were present at time of roll call: BENOIT, ROYBAL SALTARELLI, MCALLESTER, WHITE, WINTERBOTTOM, PETTIS.

• Opening Comments

MSRC Chair Greg Pettis reported that he and SCAQMD Board Member John Benoit attended an event in Moreno Valley and had an opportunity to ride in some dump trucks the MSRC funded. It was a good event.

Henry Hogo, Assistant DEO/Science and Technology Advancement, announced that yesterday Cummins Westport got a CARB certification for a heavy-duty 9 liter engine at 0.02 grams, which is the first natural gas heavy-duty engine to reach the lowest of the optional NOx standards. MSRC Member Erik White added that one engine certified for a couple different applications, for urban buses, trash trucks, and smaller heavy-duty vehicles. It is important to push hard to get these engines to market for very clean, very low NOx engines here in the South Coast, and not just help regional air quality issues here, but throughout the state. Mr. Hogo said that the engine manufacturer indicated that this engine can go into repowers, so they don't have to buy a new truck or bus. They can replace certain components and get the current natural gas engine down to 0.02 grams, so the costs of such activities are going to be a lot less than buying a whole new truck or bus.

PUBLIC COMMENT PERIOD

• Public comments were allowed during the discussion of each agenda item. No comments were made on non-agenda items.

STATUS REPORT

- Clean Transportation Policy Update
 - Cynthia Ravenstein, MSRC Contracts Administrator, gave the Clean Transportation Policy Update, in the absence of MSRC-TAC Chair Gretchen Hardison. In particular, SB 350 (de Leon) was originally going to include a requirement to reduce petroleum consumption in California by 50 percent. That element of it was removed, but it was approved with "by 2030 50 percent of utility power coming from renewable energy and a 50 percent increase in energy efficiency in existing buildings." Ms. Ravenstein also indicated that the link will be emailed to the Members so that they can access the full Update online.

CONSENT CALENDAR (Items 1 through 6)

<u>Receive and Approve Items</u> <u>Agenda Item #1 – Minutes of the August 20, 2015 MSRC Meeting</u>

The MSRC minutes of the August 20, 2015 meeting were not yet available, and therefore postponed to the October meeting.

Agenda Item #2 – Summary of Final Reports by MSRC Contractors

The MSRC received and unanimously approved three final report summaries this month as follows:

- 1. City of Corona, Contract #MS11019, which provided \$225,000 for the expansion of their existing CNG station;
- 2. Border Valley Trading Company, Contract #MS11010, which provided \$150,000 to construct an LNG fueling station; and
- 3. FirstCNG, LLC, Contract #MS12073, which provided \$150,000 towards a new CNG station in Lake Forest.

ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC MEMBER ERIK WHITE, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO APPROVE THE FINAL REPORTS ABOVE. AYES: BENOIT, ROYBAL SALTARELLI, MCALLESTER, WHITE, WINTERBOTTOM, PETTIS. NOES: NONE.

ACTION: MSRC staff will file the final reports and release any retention on the contracts.

<u>Receive and File Items</u> Agenda Item #3 – MSRC Contracts Administrator's Report

The MSRC AB 2766 Contracts Administrator's Report for July 30 through August 26, 2015 was included in the agenda package.

ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC MEMBER ERIK WHITE, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO RECEIVE AND FILE THE CONTRACTS ADMINISTRATOR'S REPORT FOR JULY 30 THROUGH AUGUST 26, 2015. AYES: BENOIT, ROYBAL SALTARELLI, MCALLESTER, WHITE, WINTERBOTTOM, PETTIS. NOES: NONE.

ACTION: SCAQMD staff will include the MSRC Contracts Administrator's Report in the MSRC Committee Report for the October 2, 2015 SCAQMD Board meeting.

Agenda Item #4 – AB 2766 Discretionary Fund Financial Report

A financial report on the AB 2766 Discretionary Fund for the period ending August 31, 2015 was included in the agenda package.

ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC MEMBER ERIK WHITE, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO RECEIVE AND FILE THE FINANCIAL REPORT FOR THE PERIOD ENDING AUGUST 31, 2015. **ACTION:** No further action is required.

<u>For Approval – As Recommended</u> <u>Agenda Item #5 – Consider 15-Month Term Extension by City of West Covina. Contract</u> <u>#ML12018 (\$300,000 – Expand CNG Station)</u>

The MSRC considered a contract modification request from the City of West Covina, Contract #ML12018, which provides \$300,000 to expand their CNG station, and granted approval of a 15-month term extension.

ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC MEMBER ERIK WHITE, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO GRANT THE CITY OF WEST COVINA, CONTRACT #ML12018, A 15-MONTH TERM EXTENSION. AYES: BENOIT, ROYBAL SALTARELLI, MCALLESTER, WHITE, WINTERBOTTOM, PETTIS. NOES: NONE.

ACTION: MSRC staff will amend the above contract accordingly.

<u>Agenda Item #6 Consider Modified Scope of Work and Two-Year Term Extension by City</u> of Corona, Contract #ML14019 (\$178,263 – Install EV Charging and Bicycle <u>Infrastructure</u>)

The MSRC considered a contract modification request from the City of Corona, #ML14019, which provides \$178,263 to install EV charging and bicycle infrastructure, and granted approval to reduce the number of locations at which they will install EV charging infrastructure from 4 to 2, but increase the total number of vehicles able to be charged from 10 to 15; the installation of 3 "fast" chargers which have a longer operational requirement under the MSRC's FYs 2012-14 Local Government Match Program; as well as a two-year no-cost term extension.

ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC MEMBER ERIK WHITE, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO GRANT APPROVAL TO THE CITY OF CORONA, CONTRACT #ML14019, TO REDUCE THE NUMBER OF LOCATIONS FROM 4 TO 2, BUT INCREASE THE TOTAL NUMBER OF VEHICLES FROM 10 TO 15; THE INSTALLATION OF 3 "FAST" CHARGERS; AND A TWO-YEAR NO-COST TERM EXTENSION. AYES: BENOIT, ROYBAL SALTARELLI, MCALLESTER, WHITE, WINTERBOTTOM, PETTIS. NOES: NONE.

ACTION: MSRC Staff will amend the above contract accordingly.

ACTION CALENDAR (Items 7 through 9) FYs 2014-16 WORK PROGRAM Agenda Item #7 – Consider Funding for Applications Received under the Local Government Match Program

As an element of the FYs 2014-16 Work Program, the MSRC allocated \$13.0 million for the Local Government Match Program. A Program Announcement was developed and released on May 1, 2015. As in the previous Work Program, the Local Government Match Program offers to co-fund qualifying medium- and heavy-duty alternative fuel vehicles, alternative fuel infrastructure projects, electric vehicle charging infrastructure, and regional street sweeping in the Coachella Valley. The bicycle projects category was expanded to include "active transportation" projects, and commercial zero emission riding lawnmowers was added as a new category. In all categories, funding is provided on a dollar-for-dollar match basis, and funding for all eligible entities shall be distributed on a first-come, first-served basis with a geographic minimum per county of \$1.625 million. The Program Announcement includes an open application period commencing June 2, 2015 and closing September 4, 2015. To date, the MSRC has awarded a total of \$5,114,228 to 25 applications. The MSRC approved 11 additional applications totaling \$2,581,925 as part of the FYs 2014-16 AB 2766 Discretionary Fund Work Program, as follows:

- a. A contract with the City of Azusa in an amount not to exceed \$474,925 to implement a "Complete Streets" pedestrian access project, contingent upon pre- and post-project collection of vehicle and pedestrian counts;
- b. A contract with the Coachella Valley Association of Governments in an amount not to exceed \$250,000 to conduct street sweeping operations in the Coachella Valley;
- c. A contract with the City of Riverside in an amount not to exceed \$500,000 to implement a "Complete Streets" pedestrian access project, contingent upon pre- and post-project collection of vehicle and pedestrian counts;
- d. A contract with the City of Wildomar in an amount not to exceed \$500,000 to install bicycle lanes;
- e. A contract with the City of Brea in an amount not to exceed \$500,000 to install a Class 1 Bikeway;
- f. A contract with the City of Rancho Cucamonga in an amount not to exceed \$30,000 to purchase one heavy-duty natural gas vehicle;
- g. A contract with the City of Palm Springs in an amount not to exceed \$110,000 to install bicycle lanes;
- h. A contract with the City of Torrance in an amount not to exceed \$32,000 to install EV charging infrastructure;
- i. A contract with the City of Eastvale in an amount not to exceed \$110,000 to install EV charging infrastructure;
- j. A contract with the City of Moreno Valley in an amount not to exceed \$20,000 to install EV charging infrastructure; and
- k. A contract with the City of San Dimas in an amount not to exceed \$55,000 to install EV charging infrastructure.

MSRC Chair Greg Pettis noted that he is on the Governing Board for CVAG and, while it is not a conflict of interest, he needed to state it for the record. MSRC Alternate Ben Benoit made a similar statement for City of Wildomar. He is Mayor of the City of Wildomar, but has no conflict of interest.

ON MOTION BY MSRC ALTERNATE BEN BENOIT, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, THE MSRC VOTED UNANIMOUSLY TO APPROVE 11 ADDITIONAL APPLICATIONS TOTALING \$2,581,925 AS PART OF THE FYS 2014-16 AB 2766 DISCRETIONARY FUND WORK PROGRAM AYES: BENOIT, ROYBAL SALTARELLI, MCALLESTER, WHITE, WINTERBOTTOM, PETTIS. NOES: NONE.

ACTION: Staff will include these awards for consideration by the SCAQMD Board at its October 2, 2015 meeting.

<u>Agenda Item #8 – Consider Funding for Application Received under the Alternative Fuel</u> <u>Infrastructure Program</u>

As part of the FYs 2014-16 Work Program, the MSRC allocated \$5.0 million for the implementation of new and expanded CNG and LNG refueling stations and modification of maintenance facilities to accommodate gaseous-fueled vehicles. A Program Announcement, #PA2015-12, was developed and released on May 1, 2015, with an open application period commencing that day and closing July 29, 2016. One application was received prior to the September 3, 2015 MSRC-TAC meeting. As part of the FYs 2014-16 AB 2766 Discretionary Fund Work Program, the MSRC approved a contract award to LBA Realty Company LLC, in an amount not to exceed \$100,000, for the installation of a limited access CNG station. As part of the FYs 2014-16 AB 2766 Discretionary Fund Work Program, the MSRC approved a contract award to LBA Realty Company LLC, in an amount not to exceed \$100,000, for the installation of a limited access CNG station.

ON MOTION BY MSRC ALTERNATE BEN BENOIT, AND SECONDED BY MSRC MEMBER ERIK WHITE, THE MSRC VOTED UNANIMOUSLY TO APPROVED A CONTRACT AWARD TO LBA REALTY COMPANY LLC, IN AN AMOUNT NOT TO EXCEED \$100,000, FOR THE INSTALLATION OF A LIMITED ACCESS CNG STATION, AS PART OF THE FYS 2014-16 AB 2766 DISCRETIONARY FUND WORK PROGRAM. AYES: BENOIT, ROYBAL SALTARELLI, MCALLESTER, WHITE, WINTERBOTTOM, PETTIS. NOES: NONE.

ACTION: Staff will include this contract award for consideration by the SCAQMD Board at its October 2 meeting.

<u>Agenda Item #9 – Consider Expanded Partnership with SCAQMD on Implementation of</u> Enhanced Fleet Modernization Program (EFMP)

[MSRC Member Michael Antonovich arrived during the discussion of this item, at approximately 2:45 p.m.]

The Enhanced Fleet Modernization Program (EFMP) is a vehicle retirement and replacement program authorized by the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (AB 118). The program focuses on providing greater incentives to eligible low- and middle-income owners of older vehicles to scrap their existing vehicle and receive a voucher either to help acquire a newer vehicle or cover the cost for transit passes or participation in car-sharing programs. In conjunction, the EFMP Plus-Up supplements the EFMP by increasing incentives for certain advanced technology replacement vehicles.

The MSRC previously allocated \$800,000 to partner with SCAQMD in its implementation of the EFMP. Of this amount, \$200,000 was awarded to one of the four contractors implementing the program, and \$600,000 was to cover vouchers. Since implementation began in May 2015, the EFMP has generated significant interest from the public and is currently oversubscribed. SCAQMD staff initiated discussions with CARB staff regarding the availability of additional funding from the State, and in a separate item at its October 2, 2015 meeting, the SCAQMD Board will be considering allocation of additional SCAQMD funds. SCAQMD staff also initiated discussions with MSRC staff regarding potential expansion of the current partnership.

Brochures were distributed at the meeting. They do not include the MSRC's name or the name of the consultants. The brochure is for the general public to understand the Program. The Program has eligibility requirements in terms of what the consumers' income levels are, based on the number of people in the household. Depending on what type of replacement vehicle selected determines the amount of funding available. That is noted in green, in the brochure. It goes up to \$9,500 for a vehicle, for low income residents, living in a disadvantaged community. The Program is called "Replace Your Ride," because it is more appealing than "EFMP."

The MSRC viewed a 40-second CBS news clip, which generated an overwhelming interest in the Program.

MSRC Member Greg Winterbottom asked if the MSRC will be included as part of the focus on the Program. Mr. Hogo replied that the brochures will be updated to include both the MSRC and SCAQMD logos, as the Program moves forward.

Mr. Hogo said that there is a provision in the EFMP Plus-Up monies that the base portion needs to be covered with local match dollars. That's part of the reason for being here today, to seek partnership with the MSRC in an amount up to \$6.2 million. Staff will request the Governing Board in October to consider approval of \$6.2 million from the SCAQMD for a total of \$12.4 million to match up to \$21.4 million dollar request to CARB. The monies are slated to go statewide and other air districts will be seeking some portion of that money. The amount of money allocated this year is \$20 million. SCAQMD is asking for the full \$20 million. The request for \$6.2 million will be prorated, depending upon how much money is received from CARB.

MSRC Chair Greg Pettis asked if the MSRC is unwilling to provide \$6.2, will that reduce the SCAQMD Governing Board's request? Mr. Hogo replied that a discussion with our Executive Officer will take place to see what to do in that situation.

Mr. Winterbottom asked if the vehicle has to be owned for a period of time. Mr. Hogo replied that the vehicle has to be operated in California for a minimum of two years prior to the application. This is determined by vehicle registration or automobile insurance. If those documents are not available, the case manager assigned to the applicant will ask for alternative forms of documentation, such as, certified automobile mechanic repair documentation for both years.

Mr. Winterbottom asked if the vouchers have to be used to purchase a vehicle. Mr. Hogo indicated that the base program covers transit passes and car sharing programs. They are working with Metro and the other transit agencies to work out a process for transit passes. Dean Saito has been talking with the City of L.A. about linking some of the EFMP funding towards the City of Los Angeles' award from CARB to implement a car sharing program.

Chair Pettis asked what the estimate is in terms of the amount of pollutants that will be reduced. Mr. Hogo indicated that staff has not yet done the calculation because the data is being collected. However, if you can think about a 1990 vehicle which is at the Low Emission Vehicle (LEV) 1 to LEV 2 level, and we are actually closer to LEV 3, that on a per car basis, the mass emissions are slightly lower. Chair Pettis asked if the Legislature considered that before they decided to back this Program. Mr. Hogo said that the Legislature saw the benefits of the Program, but has a strong desire for lower income residents to have the ability to access cleaner vehicles.

Erik White added that CARB has been very successful at the state level with incentivizing the purchase of new zero-emission vehicles through the CVRP program. Those are vehicles that are typically out of reach for moderate and low income consumers. This really was an important program to make available to the South Coast and San Joaquin Valley as a way to allow those types of consumers to have access to these vehicles. At these prices, you really are making these vehicles on a more equal footing with otherwise dirtier, less efficient, conventional vehicles. It really is a great program from the state's perspective to ensure that all citizens in the state, and certainly in the region, have access to advanced technology vehicles. CARB is very encouraged with the success that the South Coast has seen. Similar success has been seen in the San Joaquin Valley, as well. It is certainly a program of which CARB is in support, working in partnership with the Air District with MSRC to move forward.

Ray Gorski indicated that the money for this program, should the MSRC choose to participate, will come from the unallocated balance. The current balance is approximately \$16.2 million. The MSRC will have an oversubscription for the Local Match Program that will be brought for MSRC consideration next month. Staff believes that the oversubscription will not be in excess of \$1.5 million. This money is to last the MSRC through the two-year work program which will end in June 30, 2016. Henry Hogo added that the request today is for up to \$6.2 million that will be used for vouchers only; no administrative costs. It will not be taken out of the MSRC account up-front. The funds will just be drawn down, as vouchers are approved. What funding is not used will remain with the MSRC. The MSRC's name will appear on the Program. The funding will be for another 1,200 beyond the 2,300 applications currently on hand. The Program will go through December of 2016. One of the provisions is to track the vehicle for 30 months. Participants will be asked to sign an affidavit to commit to report for 30 months.

Chair Pettis suggested that a status update on the Program be provided to the MSRC in four to five months' time.

The MSRC considered this partnership opportunity and approved an allocation of up to \$6,201,000 to augment the SCAQMD funds to implement the EFMP and EFMP Plus-Up as an element of the FYs 2014-16 AB 2766 Discretionary Fund Work Program. The MSRC contribution would be for the voucher program only.

ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC MEMBER MICHAEL ANTONOVICH, THE MSRC VOTED UNANIMOUSLY TO APPROVE PARTNERSHIP WITH SCAQMD AND AN ALLOCATION OF UP TO \$6,201,000 TO AUGMENT THE SCAQMD FUNDS TO IMPLEMENT THE EFMP AND EFMP PLUS-UP AS AN ELEMENT OF THE FYS 2014-16 AB 2766 DISCRETIONARY FUND WORK PROGRAM. THE MSRC CONTRIBUTION WOULD BE FOR THE VOUCHER PROGRAM ONLY. AYES: ANTONOVICH, ROYBAL SALTARELLI, MCALLESTER, WINTERBOTTOM, PETTIS. NOES: NONE. ABSTAIN: WHITE. **ACTION:** Staff will include this this allocation of funds for consideration by the SCAQMD Board at its October 2, 2015 meeting.

OTHER BUSINESS Agenda Item #10 – Other Business

Henry Hogo indicated that the 27th Clean Air Awards Luncheon will be held at the Millennium Biltmore Hotel in Los Angeles. MSRC and MSRC-TAC members are invited to attend. Ana Ponce will be sending an email to the members asking for an R.S.V.P., if interested.

ADJOURNMENT

THERE BEING NO FURTHER BUSINESS, THE MSRC MEETING ADJOURNED AT 2:58 P.M.

NEXT MEETING:

Thursday, October 15, 2015, at 2 p.m., Room CC-8.

[Prepared by Ana Ponce]



MOBILE SOURCE AIR POLLUTION REDUCTION REVIEW COMMITTEE THURSDAY, OCTOBER 15, 2015 MEETING MINUTES

21865 Copley Drive, Diamond, Bar, CA 91765- Conference Room CC-8

MEMBERS PRESENT:

(Chair) Greg Pettis, representing RCTC (Vice Chair) Larry McCallon, representing SANBAG Michael Antonovich, representing SCAQMD (via v/c) Ben Benoit (Alt.), representing SCAQMD Dolores Roybal Saltarelli, representing Regional Rideshare Agency (via v/c) Adam Rush (Alt.), representing Riverside County Transportation Commission Erik White, representing California Air Resources Board Greg Winterbottom, representing OCTA

MEMBERS ABSENT:

Michele Martinez, representing SCAG Steve Veres, representing LA County MTA

MSRC-TAC MEMBERS PRESENT:

(MSRC-TAC Vice Chair) Tanya Love, RCTC Rongsheng Luo (Alt.), representing Southern California Association of Governments

OTHERS PRESENT:

Debra Mendelsohn, SCAQMD Board Asst. (Antonovich) Ric Teano, OCTA

SCAQMD STAFF & CONTRACTORS

Ray Gorski, MSRC Technical Advisor-Contractor John Kampa, Financial Analyst Matt MacKenzie, MSRC Contracts Assistant Ana Ponce, MSRC Administrative Liaison Cynthia Ravenstein, MSRC Contracts Administrator Veera Tyagi, Senior Deputy District Counsel Rachel Valenzuela, MSRC Contracts Assistant

CALL TO ORDER

• Call to Order

MSRC Chair Greg Pettis called the meeting to order at 2 p.m. Chair Pettis asked that roll call be taken. The following members were present at time of roll call: BENOIT, SALTARELLI, WHITE, MCCALLON, PETTIS.

• Opening Comments

There were no opening comments.

PUBLIC COMMENT PERIOD

• Public comments were allowed during the discussion of each agenda item. No comments were made on non-agenda items.

STATUS REPORT

- Clean Transportation Policy Update
 - Cynthia Ravenstein reported that for the month of October the Clean Transportation Policy Update focuses on the bills that were signed by the Governor. One of the items relevant to the MSRC is some modifications to the Carl Moyer Program; recognizing GHG reductions, and allowing adjustments to the cost effectiveness formula, giving them a little bit more flexibility to do some different types of projects. Ms. Ravenstein will send the MSRC Members a link to be able to access more details on the various items. The next Update will focus more on regulatory and other policy issues.

CONSENT CALENDAR (Items 1 through 5)

<u>Receive and Approve Items</u> <u>Agenda Item #1 – Minutes of the August 20, 2015 MSRC Meeting</u>

The minutes of the August 20, 2015 MSRC meeting were distributed at the meeting.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC ALTERNATE BEN BENOIT, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 1 THROUGH 5, THE MSRC UNANIMOUSLY VOTED TO APPROVE THE AUGUST 20, 2015 MSRC MEETING MINUTES. AYES: BENOIT, SALTARELLI, WHITE, MCCALLON, PETTIS. NOES: NONE.

ACTION: Staff will include the minutes in the MSRC Committee Report for the November 6, 2015 SCAQMD Board meeting, and place a copy on the MSRC's website.

Agenda Item #2 – Summary of Final Reports by MSRC Contractors

Two final report summaries were included in the agenda package, as follows:

1. Sysco Food Services of L.A., Contract #MS12009, which provided \$150,000 to construct a new publicly-accessible LNG station; and

2. Los Angeles Unified School District, Contract #MS11073, which provided \$175,000 for the expansion of an existing CNG station.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC ALTERNATE BEN BENOIT, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 1 THROUGH 5, THE MSRC UNANIMOUSLY VOTED TO APPROVE THE FINAL REPORTS ABOVE. AYES: BENOIT, SALTARELLI, WHITE, MCCALLON, PETTIS. NOES: NONE.

ACTION: MSRC staff will file the final reports and release any retention on the contracts.

<u>Receive and File Items</u> <u>Agenda Item #3 – MSRC Contracts Administrator's Report</u>

The MSRC AB 2766 Contracts Administrator's Report for August 27 through September 23, 2015 was included in the agenda package.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC ALTERNATE BEN BENOIT, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 1 THROUGH 5, THE MSRC UNANIMOUSLY VOTED TO RECEIVE AND FILE THE CONTRACTS ADMINISTRATOR'S REPORT FOR AUGUST 27 THROUGH SEPTEMBER 23, 2015. AYES: BENOIT, SALTARELLI, WHITE, MCCALLON, PETTIS. NOES: NONE.

ACTION: SCAQMD staff will include the MSRC Contracts Administrator's Report in the MSRC Committee Report for the November 6, 2015 SCAQMD Board meeting.

Agenda Item #4 – Financial Report on AB 2766 Discretionary Fund

A financial report on the AB 2766 Discretionary Fund for the period ending September 30, 2015 was distributed at the meeting.

> ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC ALTERNATE BEN BENOIT, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 1 THROUGH 5, THE MSRC UNANIMOUSLY VOTED TO RECEIVE AND FILE THE FINANCIAL REPORT FOR THE PERIOD ENDING SEPTEMBER 30, 2015. AYES: BENOIT, SALTARELLI, WHITE, MCCALLON, PETTIS. NOES: NONE.

ACTION: No further action is required.

<u>For Approval, As Recommended</u> <u>Agenda Item #5 – Consider 60-Month Term Extension by City of Desert Hot Springs,</u> <u>Contract #ML08043 (\$25,000 – Purchase of 1 CNG Heavy-Duty Vehicle)</u>

The City of Desert Hot Springs' progress was delayed because their original co-funding became unavailable. The City was able to secure additional outside funding, and requests a 60-month no-cost term extension.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC ALTERNATE BEN BENOIT, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 1 THROUGH 5, THE MSRC UNANIMOUSLY VOTED TO APPROVE A 60-MONTH NO COST TERM EXTENSION TO THE CITY OF DESERT HOT SPRINGS, CONTRACT #ML08043, AS PART OF THE FY 2007-08 LOCAL GOVERNMENT MATCH PROGRAM. AYES: BENOIT, SALTARELLI, WHITE, MCCALLON, PETTIS. NOES: NONE.

ACTION CALENDAR (Items 6 and 7) FYs 2014-16 Work Program Agenda Item #6 – Consider \$1,935 Contract Value Increase by the Better World Group, Contract #MS16030 (Pending)

Cynthia Ravenstein, MSRC Contracts Administrator reported on this item. On September 4, 2015, the SCAQMD Board approved an award to the Better World Group as part of the MSRC's FYs 2014-16 Work Program, in an amount not to exceed \$118,065, to provide programmatic outreach services for the MSRC. Subsequent to the approval, staff discovered that the total cost quote had been inaccurately described to both the MSRC and SCAQMD. The \$118,065 figure was actually the total for labor costs only, and did not include \$1,935 which the Better World Group had quoted for expenses. The MSRC is being requested to allocate an additional \$1,935 for this award amount to correct the contract value to \$120,000. The MSRC-TAC reviewed this request and recommended approval.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER ERIK WHITE, THE MSRC UNANIMOUSLY VOTED TO APPROVE A \$1,935 CONTRACT AWARD INCREASE TO THE BETTER WORLD GROUP, CONTRACT #MS16030 (PENDING), TO CORRECT THE CONTRACT VALUE TO \$120,000. AYES: BENOIT, SALTARELLI, WHITE, MCCALLON, PETTIS. NOES: NONE.

ACTION: Staff will include this contract award increase for consideration by the SCAQMD Board at its November 6, 2015 meeting.

<u>Agenda Item #7 – Consider Funding for Applications Received under the Local</u> <u>Government Match Program as Part of the FYs 2014-16 AB 2766 Discretionary Fund Work</u> <u>Program</u>

MSRC Vice Chair Larry McCallon disclosed that he has no financial interest in this item, but he is Mayor of the City of Highland.

[MSRC Member Greg Winterbottom arrived at the meeting during the discussion of this item, at approximately 2:05 p.m.]

MSRC-TAC Vice Chair Tanya Love reported that the Local Government Match Program was oversubscribed. Thirteen million dollars were allocated to this program, which included the geographic minimums for the four counties. All the geographic minimums have been met. Thirty-six applications were previously reviewed and approved by the MSRC. Today's action is to consider an additional 36 applications, a total of 72 for the whole program. Twenty-four of those applications are within the \$13 million funding allocation. Additional information is on Table 1

of the staff report. Table 2 of the staff report shows the \$2 million in the back up list. Table 3 provides a breakdown by jurisdiction and programmatic area of all the funding requests.

It was recently brought to the Subcommittee's attention that in the City of South Pasadena's original application, there was a secondary request for a vehicle, asking for an additional \$30,000. The MSRC previously approved \$180,000 for them, but the page asking for a second vehicle was inadvertently overlooked. In addition, 4 of the 36 applications presented today for consideration include an Active Transportation Component (ATC), to encourage more walking and bicycling. It is the Subcommittee's recommendation that these projects be approved but with a pre- and post-survey to see if the ATC does actually reduce vehicle trips. With MSRC approval, the Subcommittee will ask that monitoring be included in the contract process. Lastly, the application from the City of El Monte is still being reviewed, pending additional information needed to determine cost effectiveness.

The recommendation is to approve \$30,000 to the City of South Pasadena, for the additional vehicle; approve the funding for the 24 additional applications, which fall within the \$13 million allocation; and the backup list is submitted for MSRC consideration. There was no recommendation concerning the backup list from the MSRC-TAC. There is money available in the unallocated budget balance, if the MSRC wants to fully fund all eligible projects.

Ray Gorski, MSRC Technical Advisor, added that while the MSRC-TAC did not bring forth a recommendation, per se, all the projects on the backup list were reviewed and they were all deemed acceptable. That is, they met all the requirements of the solicitation. It is a policy decision whether or not the MSRC wants to allocate the additional money to that category.

Chair Pettis asked about the remaining time in the MSRC's work plan for this unallocated money. Mr. Gorski indicated that there is approximately \$7 million which is currently unallocated for this two-year work program. The next work program cycle will begin on July 1, 2016. Right now there are not any specific additional categories for MSRC consideration, however, there has been some discussion about other programs that may be presenting themselves over the next couple of months, specifically those that are associated with the near zero emission heavy duty vehicles.

John Kampa, Fiscal Analyst, indicated that he took the October award that went to the SCAQMD Board, and he included that in this report, so \$10 million is what is actually currently available in the unallocated budget balance.

ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC ALTERNATE BEN BENOIT, THE MSRC VOTED UNANIMOUSLY TO APPROVE THE REMAINDER OF THE CITY OF SOUTH PASADENA'S APPLICATION, REQUESTING AN ADDITIONAL \$30,000 FOR THE PURCHASE OF A SECOND HEAVY-DUTY NATURAL GAS VEHICLE; FUNDING FOR 24 AWARDS TOTALING \$5,201,697; AND ALLOCATING \$2,016,316 FROM THE UNALLOCATED BUDGET BALANCE, TO FUND THE REMAINING APPLICATIONS ON THE BACKUP LIST; AS PART OF THE FYS 2014-16 AB 2766 DISCRETIONARY FUND WORK PROGRAM. AYES: BENOIT, SALTARELLI, WHITE, WINTERBOTTOM, MCCALLON, PETTIS. NOES: NONE.

ACTION: Staff will include these awards for consideration by the SCAQMD Board at its November 6, 2015 meeting.

[MSRC Member Michael Antonovich arrived at 2:11 p.m.]

<u>OTHER BUSINESS</u> Agenda Item #8 – Other Business

No other business was introduced.

ADJOURNMENT

THERE BEING NO FURTHER BUSINESS, THE MSRC MEETING ADJOURNED AT 2:15 P.M.

NEXT MEETING:

Thursday, November 19, 2015, at 2 p.m., Room CC-8.

[Prepared by Ana Ponce]



MSRC Agenda Item No. 3

DATE:	February 18, 2016
FROM:	Cynthia Ravenstein
SUBJECT:	AB 2766 Contracts Administrator's Report
SYNOPSIS:	This report covers key issues addressed by MSRC staff, status of open contracts, and administrative scope changes from December 3, 2015 to January 27, 2016.
RECOMMENDATION:	Receive and file report
WORK PROGRAM IMPACT:	None

Contract Execution Status

2014-16 Work Program

On December 5, 2014, the SCAQMD Governing Board approved an award under the AB118 Enhanced Fleet Maintenance Program. This contract is executed.

On June 5, 2015, the SCAQMD Governing Board approved two awards under the Event Center Transportation Program and one award to provide low-emission transportation services to the Special Olympics World Games. These contracts are with the prospective contractor for signature or executed.

On September 4, 2015, the SCAQMD Governing Board approved 25 awards under the Local Government Match Program and one award under the Transportation Control Measure Partnership Program. These contracts are under development, undergoing internal review, with the prospective contractor for signature, with the SCAQMD Board Chair for signature, or executed.

On October 2, 2015, the SCAQMD Governing Board approved 11 awards under the Local Government Match Program and one award under the Alternative Fuel Infrastructure Program. These contracts are under development, undergoing internal review, or with the prospective contractor for signature.

On November 6, 2015, the SCAQMD Governing Board approved 37 awards under the Local Government Match Program. These contracts are under development, undergoing internal review, or with the prospective contractor for signature.

On December 4, 2015, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program, one award under the Alternative Fuel Infrastructure Program, and one award under the Transportation Control Measure Partnership Program. These contracts are under development or undergoing internal review.

On January 8, 2016, the SCAQMD Governing Board approved two awards under the Major Event Center Transportation Program, one award under the Local Government Match Program, and one award under the Transportation Control Measure Partnership Program. These contracts are under development or undergoing internal review.

2012-14 Work Program

On April 5, 2013, the SCAQMD Governing Board approved three awards under the Event Center Transportation Program. These contracts are executed.

On July 5, 2013, the SCAQMD Governing Board approved an additional award to Orange County Transportation Authority under the Event Center Transportation Program. This contract is executed.

On September 6, 2013, the SCAQMD Governing Board approved an award to Transit Systems Unlimited under the Event Center Transportation Program. This contract is executed.

On November 1, 2013, the SCAQMD Governing Board approved two awards under the Event Center Transportation Program. These contracts are executed.

On December 6, 2013, the SCAQMD Governing Board approved 25 awards under the Local Government Match Program, 12 awards under the Alternative Fuel Infrastructure Program, one award under the Alternative Fuel School Bus Incentives Program, and one award under the Event Center Transportation Program. These contracts are undergoing modification or executed.

On January 10, 2014, the SCAQMD Governing Board approved three awards under the Local Government Match Program, one award under the Alternative Fuel Infrastructure Program, and one award under the Alternative Fuel School Bus Incentives Program. These contracts are executed.

On February 7, 2014, the SCAQMD Governing Board approved two awards under the Local Government Match Program and one award under the Alternative Fuel Infrastructure Program. These contracts are executed.

On April 4, 2014, the SCAQMD Governing Board approved two awards under the Local Government Match Program and three awards under the Traffic Signal Synchronization Partnership Program. These contracts are executed.

On May 2, 2014, the SCAQMD Governing Board approved 12 awards under the Local Government Match Program. These contracts are awaiting responses from the prospective contractor, with the prospective contractor for signature, or executed.

On June 6, 2014, the SCAQMD Governing Board approved an award under the Traffic Signal Synchronization Partnership Program. This contract is executed.

On July 11, 2014, the SCAQMD Governing Board approved an award under the Traffic Signal Synchronization Partnership Program. This contract is executed.

On September 5, 2014, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On October 3, 2014, the SCAQMD Governing Board approved an award under the Alternative Fuel Infrastructure Program. This contract is executed.

On December 5, 2014, the SCAQMD Governing Board approved 12 awards under the Alternative Fuel Infrastructure Program and two awards under the Event Center Transportation Program. These contracts are awaiting responses from the prospective contractor, with the prospective contractor for signature, or executed.

On February 6, 2015, the SCAQMD Governing Board approved 3 awards under the Alternative Fuel Infrastructure Program. These contracts are awaiting responses from the prospective contractor or executed.

Work Program Status

Contract Status Reports for work program years with open (including "Open/Complete") and/or pending contracts are attached. MSRC or MSRC-TAC members may request spreadsheets covering any other work program year.

FY 2004-05 Work Program Contracts

One contract from this work program year is open.

FY 2004-05 Invoices Paid

No invoices were paid during this period.

FY 2005-06 Work Program Contracts

No contracts from this work program year are open; and 3 are in "Open/Complete" status, having completed all obligations save ongoing operation. Two contracts closed during this period: City of Colton, Contract #ML06070 – Purchase Two CNG Pickups; and Clean Energy Fuels Corporation, Contract #MS06049 – Install CNG Fueling Station at Long Beach Police Department. One contract moved into "Open/Complete" status during this period: City of Hemet, Department of Public Works, Contract #ML06035 – Purchase 7 Heavy-Duty Natural Gas Vehicles & Install New CNG Station.

FY 2005-06 Work Program Invoices Paid No invoices were paid during this period.

FY 2006-07 Work Program Contracts

2 contracts from this work program year are open; and 9 are in "Open/Complete" status.

FY 2006-07 Invoices Paid

No invoices were paid during this period.

FY 2007-08 Work Program Contracts

7 contracts from this work program year are open; and 17 are in "Open/Complete" status. 3 contracts closed during this period: Burrtec Waste Industries, Contract #MS08005 – Purchase

15 Heavy-Duty Natural Gas Vehicles (Azusa); Burrtec Waste Industries, Contract #MS08006 – Purchase 15 Heavy-Duty Natural Gas Vehicles (Saugus); and City of Los Angeles, Bureau of Sanitation, Contract #MS08053 – Install New LNG/CNG Station.

FY 2007-08 Invoices Paid

No invoices were paid during this period.

FY 2008-09 Work Program Contracts

3 contracts from this work program year are open; and 16 are in "Open/Complete" status. One contract passed into "Open/Complete" status during this period: City of Palm Springs, Contract #ML09010 – Purchase One Heavy-Duty Natural Gas Vehicle.

FY 2008-09 Invoices Paid

No invoices were paid during this period.

FY 2010-11 Work Program Contracts

18 contracts from this work program year are open; and 33 are in "Open/Complete" status. 2 contracts closed during this period: Eastern Municipal Water District, Contract #MS11061 – Retrofit One Off-Road Vehicle; and SA Recycling, Contract #MS11076 – Retrofit 13 Off-Road Vehicles. One contract passed into "Open/Complete" status during this period: City of Torrance, Contract #MS11071 – Install New Limited Access CNG Station.

FY 2010-11 Invoices Paid

One invoice in the amount of \$16,147.50 was paid during this period.

FY 2011-12 Work Program Contracts

36 contracts from this work program year are open, and 23 are in "Open/Complete" status.

FY 2011-12 Invoices Paid

One invoice in the amount of \$112,275.00 was paid during this period.

FYs 2012-14 Work Program Contracts

56 contracts from this work program year are open, and 4 are in "Open/Complete" status. 5 contracts closed during this period: Orange County Transportation Authority, Contract #MS14002 –Clean Fuel Transit Service to 2014 Orange County Fair; Transit Systems Unlimited, Contract #MS14005 – Provide Expanded Shuttle Service to Hollywood Bowl; Orange County Transportation Authority, Contract #MS14007 – Implement Special Metrolink Service to Angel Stadium; Orange County Transportation Authority, Contract #MS14008 – Clean Fuel Transit Service to 2015 Orange County Fair; and Southern California Regional Rail Authority, Contract #MS14088 – Implement Special Metrolink Service to Autoclub Speedway. For Contract #ML14013, which is still pending execution, the City of Los Angeles requested a reduction in scope and value due to unavailability of AB 2766 Subvention Funds. The proposed contract has been revised and \$3,400,000 will revert to the AB 2766 Discretionary Fund.

FYs 2012-14 Invoices Paid

5 invoices totaling \$60,832.72 were paid during this period.

FYs 2014-16 Work Program Contracts

10 contracts from this work program year are open. One contract closed during this period:

Special Olympics World Games Los Angeles, Contract #MS16003 – Low-Emission Transportation Service for Special Olympics World Games.

FYs 2014-16 Invoices Paid

2 invoices totaling \$10,300.00 were paid during this period.

Administrative Scope Changes

5 administrative scope changes were initiated during the period of December 3, 2015 to January 27, 2016:

- Southern California Gas Company, Contract #MS12024, Install Public Access CNG Station in Murrieta 11-month no-cost term extension
- City of South Pasadena, Contract #ML14068, Install EV Charging Station 6-month no-cost term extension
- County of Los Angeles Dept. of Public Works, Contract #ML05014 3-month no-cost term extension to keep open for MSRC consideration
- Top Shelf Consulting, Contract #MS14089, Implement Enhanced Fleet Modernization Program - \$300,000 contract value increase using <u>non</u>-MSRC funds (SCAQMD Special Revenue Fund 56) and approximate 4-month term extension
- City of Los Angeles, Bureau of Sanitation, Contract #ML14013 (proposed), Purchase 128 Heavy-Duty Natural Gas Vehicles – Reduce vehicles from 128 to 14, and contract value from \$3,840,000 to \$400,000

Attachments

• FY 2004-05 through FYs 2014-16 (except FY 2009-10) Contract Status Reports



AB2766 Discretionary Fund Program Invoices

December 3, 2015 to January 27, 2016

Contract Admin.	MSRC Chair	MSRC Liaison	Finance	Contract #	Contractor	Invoice #	Amount
2010-2	2011 Work Prog	ram					
1/26/2016	1/27/2016	1/27/2016	1/28/2016	MS11056	The Better World Group	1474-Final	\$16,147.50
Total: \$16,147	.50						
2011-2	2012 Work Prog	ram					
1/26/2016	1/27/2016	1/27/2016	1/28/2016	MS12033	Mike Diamond/Phace Management Services LL	2	\$112,275.00
Total: \$112,27	5.00						
2012-2	2014 Work Prog	ram					
1/6/2016	1/27/2016	1/27/2016	1/28/2016	MS14073	Anaheim Transportation Network	52744	\$11,976.12
1/6/2016	1/27/2016	1/27/2016	1/28/2016	MS14073	Anaheim Transportation Network	52743	\$12,455.04
1/6/2016	1/27/2016	1/27/2016	1/28/2016	MS14073	Anaheim Transportation Network	52742	\$12,013.04
1/6/2016	1/27/2016	1/27/2016	1/28/2016	MS14073	Anaheim Transportation Network	52741	\$12,046.32
1/6/2016	1/27/2016	1/27/2016	1/28/2016	MS14073	Anaheim Transportation Network	52739	\$12,342.20
Total: \$60,832	2.72						

2014	-2016 Work Prog	gram					
12/30/2015	12/30/2015	12/31/2015	1/7/2016	MS14089	Top Shelf Consulting, LLC	007	\$10,000.00
12/17/2015	12/17/2015	12/17/2015	12/22/2015	MS16004	Mineral LLC	101317	\$300.00

Total: \$10,300.00

Total This Period: \$199,555.22



FYs 2004-05 Through 2014-16 AB2766 Contract Status Report

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2004	4-2005 Contracts								
Open Cont	racts								
ML05014	Los Angeles County Department of P	5/21/2007	11/20/2008	3/20/2016	\$204,221.00	\$0.00	Traffic Signal Synchronization	\$204,221.00	No
Total: 1								L	<u>.</u>
Declined/C	ancelled Contracts								
ML05005	City of Highland				\$20,000.00	\$0.00	2 Medium Duty CNG Vehicles	\$20,000.00	No
ML05008	Los Angeles County Department of P				\$140,000.00	\$0.00	7 Heavy Duty LPG Street Sweepers	\$140,000.00	No
ML05010	Los Angeles County Department of P				\$20,000.00	\$0.00	1 Heavy Duty CNG Bus	\$20,000.00	No
MS05030	City of Inglewood				\$31,662.00	\$0.00	2 CNG Street Sweepers	\$31,662.00	No
MS05032	H&C Disposal				\$34,068.00	\$0.00	2 CNG Waste Haulers	\$34,068.00	No
MS05044	City of Colton				\$78,720.00	\$0.00	CNG Station Upgrade	\$78,720.00	No
Total: 6									<u>.</u>
Closed Col	ntracts								
ML05006	City of Colton Public Works	7/27/2005	7/26/2006		\$30,000.00	\$30,000.00	3 Medium Duty CNG Vehicles	\$0.00	Yes
ML05011	Los Angeles County Department of P	8/10/2006	12/9/2007	6/9/2008	\$52,409.00	\$51,048.46	3 Heavy Duty LPG Shuttle Vans	\$1,360.54	Yes
ML05013	Los Angeles County Department of P	1/5/2007	7/4/2008	1/4/2013	\$313,000.00	\$313,000.00	Traffic Signal Synchronization	\$0.00	Yes
ML05015	City of Lawndale	7/27/2005	7/26/2006		\$10,000.00	\$10,000.00	1 Medium Duty CNG Vehicle	\$0.00	Yes
ML05016	City of Santa Monica	9/23/2005	9/22/2006	9/22/2007	\$350,000.00	\$350,000.00	6 MD CNG Vehicles, 1 LPG Sweep, 13 CNG	\$0.00	Yes
ML05017	City of Signal Hill	1/16/2006	7/15/2007		\$126,000.00	\$126,000.00	Traffic Signal Synchronization	\$0.00	Yes
ML05018	City of San Bernardino	4/19/2005	4/18/2006		\$40,000.00	\$40,000.00	4 M.D. CNG Vehicles	\$0.00	Yes
ML05019	City of Lakewood	5/6/2005	5/5/2006		\$10,000.00	\$10,000.00	1 M.D. CNG Vehicle	\$0.00	Yes
ML05020	City of Pomona	6/24/2005	6/23/2006		\$10,000.00	\$10,000.00	1 M.D. CNG Vehicle	\$0.00	Yes
ML05021	City of Whittier	7/7/2005	7/6/2006	4/6/2008	\$100,000.00	\$80,000.00	Sweeper, Aerial Truck, & 3 Refuse Trucks	\$20,000.00	Yes
ML05022	City of Claremont	9/23/2005	9/22/2006		\$20,000.00	\$20,000.00	2 M.D. CNG Vehicles	\$0.00	Yes
ML05024	City of Cerritos	4/18/2005	3/17/2006		\$10,000.00	\$10,000.00	1 M.D. CNG Vehicle	\$0.00	Yes
ML05025	City of Malibu	5/6/2005	3/5/2006		\$10,000.00	\$10,000.00	1 Medium-Duty CNG Vehicle	\$0.00	Yes
ML05026	City of Inglewood	1/6/2006	1/5/2007	2/5/2009	\$60,000.00	\$60,000.00	2 CNG Transit Buses, 1 CNG Pothole Patch	\$0.00	Yes
ML05027	City of Beaumont	2/23/2006	4/22/2007	6/22/2010	\$20,000.00	\$20,000.00	1 H.D. CNG Bus	\$0.00	Yes
ML05028	City of Anaheim	9/8/2006	9/7/2007	5/7/2008	\$85,331.00	\$85,331.00	Traffic signal coordination & synchronization	\$0.00	Yes
ML05029	Los Angeles World Airports	5/5/2006	9/4/2007		\$140,000.00	\$140,000.00	Seven CNG Buses	\$0.00	Yes
ML05071	City of La Canada Flintridge	1/30/2009	1/29/2011		\$20,000.00	\$20,000.00	1 CNG Bus	\$0.00	Yes

2/10/2016

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML05072	Los Angeles County Department of P	8/24/2009	5/23/2010	1/23/2011	\$349,000.00	\$349,000.00	Traffic Signal Synchronization (LADOT)	\$0.00	Yes
MS05001	A-Z Bus Sales, Inc.	2/4/2005	12/31/2005	12/31/2006	\$1,385,000.00	\$1,385,000.00	CNG School Bus Buydown	\$0.00	Yes
MS05002	California Bus Sales	2/4/2005	12/31/2005	12/31/2006	\$1,800,000.00	\$1,800,000.00	CNG School Bus Buydown	\$0.00	Yes
MS05003	BusWest	1/28/2005	12/31/2005	12/31/2006	\$2,100,000.00	\$1,620,000.00	CNG School Bus Buydown	\$480,000.00	Yes
MS05004	Johnson/Ukropina Creative Marketin	11/27/2004	1/18/2006	4/18/2006	\$1,000,000.00	\$994,612.56	Implement "Rideshare Thursday" Campaign	\$5,387.44	Yes
MS05031	City of Ontario, Housing & Municipal	7/22/2005	3/21/2007		\$191,268.00	\$191,268.00	11 CNG Waste Haulers	\$0.00	Yes
MS05033	Waste Management of the Desert	9/26/2005	5/25/2007		\$202,900.00	\$202,900.00	10 CNG Waste Haulers	\$0.00	Yes
MS05034	Sukut Equipment, Inc.	9/9/2005	5/8/2007		\$1,151,136.00	\$1,151,136.00	Repower 12 Scrapers	\$0.00	Yes
MS05035	Varner Construction Inc.	11/28/2005	4/27/2007	2/27/2008	\$334,624.00	\$334,624.00	Repower 5 Off-Road H.D. Vehicles	\$0.00	Yes
MS05036	Camarillo Engineering	8/18/2005	1/17/2007		\$1,167,276.00	\$1,167,276.00	Repower 12 Scrapers	\$0.00	Yes
MS05037	Road Builders, Inc.	11/21/2005	4/20/2007	6/20/2008	\$229,302.00	\$229,302.00	Repower 2 Scrapers	\$0.00	Yes
MS05038	SunLine Transit Agency	3/30/2006	9/29/2007		\$135,000.00	\$135,000.00	15 CNG Buses	\$0.00	Yes
MS05039	Los Angeles County MTA	4/28/2006	4/27/2008		\$405,000.00	\$405,000.00	75 CNG Buses	\$0.00	Yes
MS05040	Orange County Transportation Autho	3/23/2006	12/22/2007	6/22/2008	\$200,000.00	\$200,000.00	25 CNG Buses	\$0.00	Yes
MS05041	The Regents of the University of Cali	9/5/2006	8/4/2007	9/4/2008	\$15,921.00	\$15,921.00	CNG Station Upgrade	\$0.00	Yes
MS05042	City of Ontario, Housing & Municipal	11/21/2005	9/20/2006	7/20/2007	\$117,832.00	\$74,531.27	CNG Station Upgrade	\$43,300.73	Yes
MS05043	Whittier Union High School District	9/23/2005	7/22/2006		\$15,921.00	\$15,921.00	CNG Station Upgrade	\$0.00	Yes
MS05045	City of Covina	9/9/2005	7/8/2006		\$10,000.00	\$7,435.61	CNG Station Upgrade	\$2,564.39	Yes
MS05046	City of Inglewood	1/6/2006	5/5/2007		\$139,150.00	\$56,150.27	CNG Station Upgrade	\$82,999.73	Yes
MS05047	Orange County Transportation Autho	10/20/2005	10/19/2006	1/19/2007	\$75,563.00	\$75,563.00	CNG Station Upgrade	\$0.00	Yes
MS05048	City of Santa Monica	7/24/2006	11/23/2007		\$150,000.00	\$150,000.00	CNG Station Upgrade	\$0.00	Yes
MS05049	Omnitrans	9/23/2005	2/22/2007		\$25,000.00	\$7,250.00	CNG Station Upgrade	\$17,750.00	Yes
MS05050	Gateway Cities Council of Governme	12/21/2005	4/20/2010		\$1,464,839.00	\$1,464,838.12	Truck Fleet Modernization Program	\$0.88	Yes
MS05051	Jagur Tractor	1/16/2006	4/15/2007	10/15/2007	\$660,928.00	\$660,928.00	Repower 6 Scrapers	\$0.00	Yes
MS05052	Caufield Equipment, Inc.	8/3/2005	1/2/2007		\$478,000.00	\$478,000.00	Repower 4 Scrapers	\$0.00	Yes
MS05070	Haaland Internet Productions (HIP D	6/24/2005	5/31/2007	11/30/2011	\$100,715.00	\$92,458.24	Design, Host & Maintain MSRC Website	\$8,256.76	Yes

Total: 44

Closed/Inco	omplete Contracts								
ML05007	Los Angeles County Dept of Beache	6/23/2006	6/22/2007	12/22/2007	\$50,000.00	\$0.00	5 Medium Duty CNG Vehicles	\$50,000.00	No
ML05009	Los Angeles County Department of P	6/22/2006	12/21/2007	9/30/2011	\$56,666.00	\$0.00	2 Propane Refueling Stations	\$56,666.00	No
ML05012	Los Angeles County Department of P	11/10/2006	5/9/2008	1/9/2009	\$349,000.00	\$0.00	Traffic Signal Synchronization (LADOT)	\$349,000.00	No
ML05023	City of La Canada Flintridge	3/30/2005	2/28/2006	8/28/2008	\$20,000.00	\$0.00	1 CNG Bus	\$20,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 200	5-2006 Contracts								
	Cancelled Contracts								
ML06018	Los Angeles County Dept of Beache				\$375,000.00	\$0.00	New CNG Station & 2 CNG Dump Trucks	\$375,000.00	No
ML06019	Los Angeles County Dept of Beache				\$250,000.00	\$0.00	New CNG Station & 2 CNG Dump Trucks	\$250,000.00	No
ML06023	City of Baldwin Park	6/16/2006	9/15/2012		\$20,000.00	\$0.00	CNG Dump Truck	\$20,000.00	No
ML06024	City of Pomona	8/3/2007	7/2/2013	7/2/2014	\$286,450.00	\$0.00	New CNG Station	\$286,450.00	No
ML06030	City of Burbank	3/19/2007	9/18/2011		\$287,700.00	\$0.00	New CNG Fueling Station	\$287,700.00	No
ML06037	City of Lynwood				\$25,000.00	\$0.00	1 Nat Gas Dump Truck	\$25,000.00	No
ML06039	City of Inglewood	2/9/2007	2/8/2008	4/8/2011	\$50,000.00	\$0.00	Modify Maintenance Facility for CNG Vehicle	\$50,000.00	No
ML06055	City of Los Angeles, Dept. of Genera				\$125,000.00	\$0.00	5 Gas-Electric Hybrid Buses	\$125,000.00	No
ML06059	City of Fountain Valley				\$25,000.00	\$0.00	One H.D. CNG Truck	\$25,000.00	No
MS06009	Clean Energy Fuels Corp.	6/23/2006	12/22/2012		\$250,000.00	\$0.00	New CNG Station - Laguna Niguel	\$250,000.00	Yes
MS06040	Capistrano Unified School District				\$136,000.00	\$0.00	New CNG Fueling Station	\$136,000.00	No
MS06041	Clean Energy Fuels Corp.	12/1/2006	3/31/2013	6/18/2009	\$250,000.00	\$0.00	New CNG Station-Newport Beach	\$250,000.00	No
MS06046	City of Long Beach, Dept. of Public				\$250,000.00	\$0.00	LNG Fueling Station	\$250,000.00	No
MS06051	Menifee Union School District	3/2/2007	7/1/2014		\$150,000.00	\$0.00	CNG Fueling Station	\$150,000.00	No
Total: 14									
Closed Co	ntracts								
ML06016	City of Whittier	5/25/2006	5/24/2012	11/24/2012	\$50,000.00	\$50,000.00	2 CNG Refuse Trucks	\$0.00	Yes
ML06017	City of Claremont	8/2/2006	4/1/2012		\$50,000.00	\$50,000.00	2 CNG Refuse Trucks	\$0.00	Yes
ML06020	Los Angeles Department of Water an	3/19/2007	9/18/2013	4/18/2014	\$25,000.00	\$25,000.00	CNG Aerial Truck	\$0.00	Yes
ML06021	Los Angeles World Airports	9/13/2006	5/12/2013		\$150,000.00	\$150,000.00	6 CNG Buses	\$0.00	Yes
ML06022	City of Los Angeles, Bureau of Sanit	5/4/2007	1/3/2014		\$1,250,000.00	\$1,250,000.00	50 LNG Refuse Trucks	\$0.00	Yes
ML06025	City of Santa Monica	1/5/2007	11/4/2012	12/14/2014	\$300,000.00	\$300,000.00	12 H.D. CNG Vehicles	\$0.00	Yes
ML06026	City of Cerritos	10/27/2006	9/26/2010		\$60,500.00	\$60,500.00	CNG Station Upgrade	\$0.00	Yes
ML06027	City of Redondo Beach	9/5/2006	5/4/2012	10/4/2012	\$50,000.00	\$50,000.00	2 Heavy-Duty CNG Trucks	\$0.00	Yes
ML06028	City of Pasadena	9/29/2006	11/28/2012	3/28/2014	\$245,000.00	\$245,000.00	New CNG Station & Maint. Fac. Upgrades	\$0.00	Yes
ML06029	City of Culver City Transportation De	9/29/2006	8/28/2012	12/28/2012	\$50,000.00	\$50,000.00	2 CNG Heavy-Duty Trucks	\$0.00	Yes
ML06031	City of Inglewood	4/4/2007	6/3/2013	9/3/2015	\$150,000.00	\$65,602.40	Purchase 4 H-D LPG Vehicles & Install LPG	\$84,397.60	Yes
ML06032	City of Rancho Cucamonga	2/13/2007	3/12/2013	2/12/2014	\$237,079.00	\$237,079.00	New CNG Station & 2 CNG Dump Trucks	\$0.00	Yes
ML06033	City of Cathedral City	11/17/2006	12/16/2012	12/16/2013	\$125,000.00	\$125,000.00	5 Heavy-Duty CNG Trucks	\$0.00	Yes
ML06034	City of South Pasadena	9/25/2006	9/24/2012		\$16,422.42	\$16,422.42	2 Nat. Gas Transit Buses	\$0.00	Yes
WIL00034				1	1				
ML06036	City of Riverside	3/23/2007	3/22/2013		\$200,000.00	\$200,000.00	8 Heavy-Duty Nat Gas Vehicles	\$0.00	Yes
	City of Riverside City of Los Angeles, Department of	3/23/2007 5/21/2007	3/22/2013 1/20/2014		\$200,000.00 \$625,000.00	\$200,000.00 \$625,000.00	8 Heavy-Duty Nat Gas Vehicles 25 CNG Street Sweepers	\$0.00 \$0.00	Yes Yes
ML06036	,								

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML06053	City of Burbank	5/4/2007	7/3/2013		\$125,000.00	\$125,000.00	Five Nat. Gas Refuse Trucks	\$0.00	Yes
ML06056	City of Los Angeles, Dept. of Genera	11/30/2007	11/29/2008		\$350,000.00	\$350,000.00	Maintenance Facility Mods.	\$0.00	Yes
ML06057	City of Rancho Cucamonga	8/28/2007	6/27/2013	8/27/2014	\$100,000.00	\$100,000.00	4 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML06058	City of Santa Monica	7/12/2007	7/11/2013		\$149,925.00	\$0.00	3 H.D. CNG Trucks & CNG Fueling Station	\$149,925.00	No
ML06060	City of Temple City	6/12/2007	6/11/2013		\$31,885.00	\$0.00	Upgrade existing CNG infrastructure	\$31,885.00	No
ML06061	City of Chino Hills	4/30/2007	4/29/2013		\$25,000.00	\$25,000.00	One H.D. CNG Vehicle	\$0.00	Yes
ML06062	City of Redlands	5/11/2007	5/10/2013		\$100,000.00	\$100,000.00	4 H.D. LNG Vehicles	\$0.00	Yes
ML06063	City of Moreno Valley	3/23/2007	11/22/2012		\$25,000.00	\$25,000.00	One H.D. CNG Vehicle	\$0.00	Yes
ML06064	City of South Pasadena	1/25/2008	11/24/2013	11/24/2014	\$50,000.00	\$50,000.00	2 H.D. CNG Vehicles	\$0.00	Yes
ML06065	City of Walnut	6/29/2007	6/28/2013		\$44,203.00	\$44,203.00	Upgrade Existing CNG Infrastructure	\$0.00	Yes
ML06066	City of Ontario, Housing & Municipal	5/30/2007	1/29/2013		\$125,000.00	\$125,000.00	5 H.D. CNG Vehicles	\$0.00	Yes
ML06067	City of El Monte	3/17/2008	5/16/2014	11/16/2014	\$157,957.00	\$157,957.00	Upgrade existing CNG infrastructure	\$0.00	Yes
ML06068	City of Claremont	8/28/2007	6/27/2013		\$60,000.00	\$60,000.00	Expand existing CNG infrastructure	\$0.00	Yes
ML06069	City of Palos Verdes Estates	11/19/2007	11/18/2013		\$25,000.00	\$25,000.00	One H.D. CNG Vehicle	\$0.00	Yes
ML06070	City of Colton	4/30/2008	2/28/2015	4/30/2015	\$50,000.00	\$0.00	Two CNG Pickups	\$50,000.00	No
MS06001	Riverside County Transportation Co	8/3/2007	9/2/2011		\$825,037.00	\$825,037.00	New Freeway Service Patrol	\$0.00	Yes
MS06002	Orange County Transportation Autho	11/7/2007	11/6/2013		\$928,740.00	\$925,091.00	New Freeway Service Patrol	\$3,649.00	Yes
MS06003	San Bernardino Associated Governm	10/19/2006	6/18/2010		\$804,240.00	\$804,239.87	New Freeway Service Patrol	\$0.13	Yes
MS06004	Los Angeles County MTA	8/10/2006	7/9/2010		\$1,391,983.00	\$1,391,791.98	New Freeway Service Patrol	\$191.02	Yes
MS06010	US Airconditioning Distributors	12/28/2006	6/27/2012		\$83,506.00	\$83,506.00	New CNG Station - Industry	\$0.00	Yes
MS06011	County Sanitation Districts of L.A. Co	6/1/2006	7/31/2012		\$150,000.00	\$150,000.00	New CNG Station - Carson	\$0.00	Yes
MS06012	Consolidated Disposal Service	7/14/2006	9/13/2012	9/13/2014	\$297,981.00	\$297,981.00	New LNG Station & Facility Upgrades	\$0.00	Yes
MS06013	City of Commerce	1/9/2008	7/8/2014	7/8/2015	\$350,000.00	\$350,000.00	New L/CNG Station - Commerce	\$0.00	Yes
MS06042	Clean Energy Fuels Corp.	1/5/2007	1/4/2013		\$150,000.00	\$150,000.00	New CNG Station-Baldwin Park	\$0.00	Yes
MS06043X	Westport Fuel Systems, Inc.	2/3/2007	12/31/2010	9/30/2011	\$2,000,000.00	\$2,000,000.00	Advanced Natural Gas Engine Incentive Pro	\$0.00	Yes
MS06045	Orange County Transportation Autho	8/17/2007	12/16/2013		\$200,000.00	\$200,000.00	CNG Fueling Station/Maint. Fac. Mods	\$0.00	Yes
MS06047	Hemet Unified School District	9/19/2007	11/18/2013		\$125,000.00	\$125,000.00	CNG Refueling Station	\$0.00	Yes
MS06048	Newport-Mesa Unified School Distric	6/25/2007	8/24/2013	8/24/2014	\$50,000.00	\$50,000.00	CNG Fueling Station	\$0.00	Yes
MS06049	Clean Energy Fuels Corp.	4/20/2007	7/19/2013	11/30/2015	\$250,000.00	\$228,491.18	CNG Fueling Station - L.B.P.D.	\$21,508.82	Yes
MS06050	Rossmoor Pastries	1/24/2007	10/23/2012		\$18,750.00	\$14,910.50	CNG Fueling Station	\$3,839.50	Yes
Total: 48									

Open/Complete Contracts

ML06035	City of Hemet, Public Works	11/10/2006	12/9/2012	1/9/2017	\$338,107.00	\$323,107.00	7 Nat Gas Trucks & New Nat Gas Infrastruct	\$15,000.00	Yes
ML06054	Los Angeles County Department of P	6/17/2009	6/16/2016		\$125,000.00	\$125,000.00	3 CNG & 2 LPG HD Trucks	\$0.00	Yes
ML06071	City of Santa Monica	6/13/2014		11/30/2016	\$149,925.00	\$149,925.00	3 H.D. CNG Trucks & CNG Fueling Station	\$0.00	Yes
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Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2006	-2007 Contracts								
Open Contr	acts								
ML07044	City of Santa Monica	9/8/2008	3/7/2015	3/7/2017	\$600,000.00	\$50,000.00	24 H.D. Nat. Gas Vehicles	\$550,000.00	No
MS07080	City of Los Angeles, Bureau of Sanit	10/31/2008	8/30/2010	8/28/2016	\$63,192.00	\$62,692.00	Off-Road Diesel Equipment Retrofit Program	\$500.00	No
Total: 2		I	I						_1
Declined/Ca	ancelled Contracts								
ML07031	City of Santa Monica				\$180,000.00	\$0.00	Upgrade N.G. Station to Add Hythane	\$180,000.00	No
ML07032	City of Huntington Beach Public Wor				\$25,000.00	\$0.00	One H.D. CNG Vehicle	\$25,000.00	No
ML07035	City of Los Angeles, General Service				\$350,000.00	\$0.00	New CNG Refueling Station/Southeast Yard	\$350,000.00	No
ML07038	City of Palos Verdes Estates				\$25,000.00	\$0.00	One H.D. LPG Vehicle	\$25,000.00	No
MS07010	Palos Verdes Peninsula Transit Auth				\$80,000.00	\$0.00	Repower 4 Transit Buses	\$80,000.00	No
MS07014	Clean Energy Fuels Corp.				\$350,000.00	\$0.00	New L/CNG Station - SERRF	\$350,000.00	No
MS07015	Baldwin Park Unified School District				\$57,500.00	\$0.00	New CNG Station	\$57,500.00	No
MS07016	County of Riverside Fleet Services D				\$36,359.00	\$0.00	New CNG Station - Rubidoux	\$36,359.00	No
MS07017	County of Riverside Fleet Services D				\$33,829.00	\$0.00	New CNG Station - Indio	\$33,829.00	No
MS07018	City of Cathedral City				\$350,000.00	\$0.00	New CNG Station	\$350,000.00	No
MS07021	City of Riverside				\$350,000.00	\$0.00	New CNG Station	\$350,000.00	No
MS07050	Southern California Disposal Co.				\$320,000.00	\$0.00	Ten Nat. Gas Refuse Trucks	\$320,000.00	No
MS07062	Caltrans Division of Equipment				\$1,081,818.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$1,081,818.00	No
MS07065	ECCO Equipment Corp.				\$174,525.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$174,525.00	No
MS07067	Recycled Materials Company of Calif				\$99,900.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$99,900.00	No
MS07069	City of Burbank	5/9/2008	3/8/2010	9/8/2011	\$8,895.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$8,895.00	No
MS07074	Albert W. Davies, Inc.	1/25/2008	11/24/2009		\$39,200.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$39,200.00	No
MS07081	Clean Diesel Technologies, Inc.				\$240,347.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$240,347.00	No
MS07082	DCL International, Inc.				\$153,010.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$153,010.00	No
MS07083	Dinex Exhausts, Inc.				\$52,381.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$52,381.00	No
MS07084	Donaldson Company, Inc.				\$42,416.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$42,416.00	No
MS07085	Engine Control Systems Limited				\$155,746.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$155,746.00	No
MS07086	Huss, LLC				\$84,871.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$84,871.00	No
MS07087	Mann+Hummel GmbH				\$189,361.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$189,361.00	No
MS07088	Nett Technologies, Inc.				\$118,760.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$118,760.00	No
MS07089	Rypos, Inc.				\$68,055.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$68,055.00	No
MS07090	Sud-Chemie				\$27,345.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$27,345.00	No
Total: 27									
Closed Con	tracts								
ML07025	City of San Bernardino	8/12/2008	7/11/2010		\$350,000.00	\$350,000.00	Maintenance Facility Modifications	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML07026	City of South Pasadena	6/13/2008	6/12/2014		\$25,000.00	\$25,000.00	One H.D. CNG Vehicle	\$0.00	Yes
ML07020	Los Angeles World Airports	6/3/2008	7/2/2014		\$25,000.00	\$25,000.00	One H.D. LNG Vehicle	\$0.00	Yes
ML07027 ML07028	City of Los Angeles, General Service	3/13/2009	3/12/2014		\$350,000.00	\$350,000.00	New CNG Refueling Station/Hollywood Yard	\$0.00	Yes
ML07020	City of Los Angeles, General Service	3/13/2009	3/12/2014		\$350,000.00	\$350,000.00	New CNG Refueling Station/Venice Yard	\$0.00	Yes
ML07020	County of San Bernardino Public Wo	7/11/2008	9/10/2015		\$200,000.00	\$200,000.00	8 Natural Gas H.D. Vehicles	\$0.00	Yes
ML07033	City of La Habra	5/21/2008	6/20/2014	11/30/2013	\$25,000.00	\$25,000.00	One H.D. Nat Gas Vehicle	\$0.00	Yes
ML07034	City of Los Angeles, General Service	3/13/2009	3/12/2014	11/00/2010	\$350,000.00	\$350,000.00	New CNG Refueling Station/Van Nuys Yard	\$0.00	Yes
ML07036	City of Alhambra	1/23/2009	2/22/2015		\$50,000.00	\$50,000.00	2 H.D. CNG Vehicles	\$0.00	Yes
ML07030	City of Los Angeles, General Service	10/8/2008	10/7/2015		\$255,222.00	\$255,222.00	Upgrade LNG/LCNG Station/East Valley Yar	\$0.00	Yes
ML07039	City of Baldwin Park	6/6/2008	6/5/2014	8/5/2015	\$50,000.00	\$50,000.00	Two N.G. H.D. Vehicles	\$0.00	Yes
ML07033	City of Moreno Valley	6/3/2008	9/2/2014	0/0/2010	\$25,000.00	\$25,000.00	One Heavy-Duty CNG Vehicle	\$0.00	Yes
ML07040 ML07041	City of La Quinta	6/6/2008	6/5/2014		\$25,000.00	\$25,000.00	One CNG Street Sweeper	\$0.00	Yes
ML07041 ML07042	City of La Quinta	8/15/2008	9/14/2010		\$100,000.00	\$100,000.00	Street Sweeping Operations	\$0.00	Yes
ML07042 ML07046	City of Culver City Transportation De	5/2/2008	5/1/2014		\$25,000.00	\$100,000.00	One H.D. Nat. Gas Vehicle	\$0.00	Yes
ML07040 ML07047	City of Cathedral City	6/16/2008	9/15/2014	3/15/2015	\$225,000.00	\$225,000.00	Two H.D. Nat. Gas Vehicles/New CNG Fueli	\$0.00	Yes
ML07047 ML07048	City of Cathedral City	9/19/2008	10/18/2010	3/13/2013	\$100,000.00	\$84,972.45	Street Sweeping Operations	\$15,027.55	Yes
ME07040 MS07001	A-Z Bus Sales, Inc.	12/28/2006	12/31/2007	2/29/2008	\$1,920,000.00	\$1,380,000.00	CNG School Bus Buydown	\$540,000.00	Yes
MS07001 MS07002	BusWest	1/19/2007	12/31/2007	3/31/2008	\$840,000.00	\$840,000.00	CNG School Bus Buydown	\$0.00	Yes
MS07002 MS07003	Westport Fuel Systems, Inc.	11/2/2007	12/31/2007	6/30/2013	\$1,500,000.00	\$1,499,990.00	Advanced Nat. Gas Engine Incentive Progra	\$0.00	Yes
MS07005	S-W Compressors	3/17/2008	3/16/2010	0/30/2013	\$60,000.00	\$7,500.00	Mountain CNG School Bus Demo Program-	\$52,500.00	Yes
MS07005 MS07006	Coachella Valley Association of Gov	2/28/2008	10/27/2008		\$400,000.00	\$400,000.00	Coachella Valley PM10 Reduction Street Sw	\$0.00	Yes
MS07000 MS07007	Los Angeles World Airports	5/2/2008	11/1/2014		\$420,000.00	\$400,000.00	Purchase CNG 21 Transit Buses	\$0.00	Yes
MS07007 MS07011	L A Service Authority for Freeway E	3/12/2010	5/31/2011	9/30/2011	\$700,000.00	\$700,000.00	"511" Commuter Services Campaign	\$0.00	Yes
MS07011 MS07012	City of Los Angeles, General Service	6/13/2008	6/12/2009	6/12/2010	\$50,000.00	\$50,000.00	Maintenance Facility Modifications	\$0.00	Yes
MS07012 MS07013	Rainbow Disposal Company, Inc.	1/25/2008	3/24/2014	9/24/2014	\$350,000.00	\$350,000.00	•	\$0.00	Yes
MS07013 MS07019	City of Cathedral City	1/9/2009	6/8/2010	9/24/2014	\$32,500.00	\$32,500.00	New High-Volume CNG Station Maintenance Facility Modifications	\$0.00	Yes
MS07019 MS07020		5/20/2009	7/19/2015		\$32,500.00	\$250,000.00	New CNG Station	\$0.00	Yes
MS07020 MS07051	Avery Petroleum City of San Bernardino	8/12/2009	12/11/2014		\$480,000.00	\$480,000.00	15 Nat. Gas Refuse Trucks	\$0.00	Yes
MS07051 MS07052	City of Redlands						Five Nat. Gas Refuse Trucks	\$0.00	Yes
MS07052 MS07053	,	7/30/2008	11/29/2014 12/30/2014		\$160,000.00	\$160,000.00	Three Nat. Gas Refuse Trucks	\$0.00	Yes
-	City of Claremont	7/31/2008			\$96,000.00	\$96,000.00		•	
MS07055	City of Culver City Transportation De	7/8/2008	9/7/2014		\$192,000.00	\$192,000.00	Six Nat. Gas Refuse Trucks	\$0.00	Yes
MS07056	City of Whittier	9/5/2008	3/4/2015	0/00/0045	\$32,000.00	\$32,000.00	One Nat. Gas Refuse Trucks	\$0.00	Yes
MS07057	CR&R, Inc.	7/31/2008	8/30/2014	6/30/2015	\$896,000.00	\$896,000.00	28 Nat. Gas Refuse Trucks	\$0.00	Yes
MS07058	The Better World Group	11/17/2007	11/16/2009	11/16/2011	\$247,690.00	\$201,946.21	MSRC Programmatic Outreach Services	\$45,743.79	Yes
MS07059	County Sanitation Districts of L.A. Co	9/5/2008	9/4/2010	7/14/2012	\$231,500.00	\$231,500.00	Off-Road Diesel Equipment Retrofit Program	\$0.00	Yes
MS07060	Community Recycling & Resource R	3/7/2008	1/6/2010	7/6/2011	\$177,460.00	\$98,471.00	Off-Road Diesel Equipment Retrofit Program	\$78,989.00	Yes
MS07061	City of Los Angeles, Department of	10/31/2008	8/30/2010	2/28/2013	\$40,626.00	\$40,626.00	Off-Road Diesel Equipment Retrofit Program	\$0.00	Yes

			Original	Amended	Contract			Award	Billing
Cont.#	Contractor	Start Date	End Date	End Date	Value	Remitted	Project Description	Balance	Complete?
MS07063	Shimmick Construction Company, In	4/26/2008	2/25/2010	8/25/2011	\$80,800.00	\$11,956.37	Off-Road Diesel Equipment Retrofit Program	\$68,843.63	Yes
MS07064	Altfillisch Contractors, Inc.	9/19/2008	7/18/2010	1/18/2011	\$160,000.00	\$155,667.14	Off-Road Diesel Equipment Retrofit Program	\$4,332.86	Yes
MS07068	Sukut Equipment Inc.	1/23/2009	11/22/2010	5/22/2012	\$26,900.00	\$26,900.00	Off-Road Diesel Equipment Retrofit Program	\$0.00	Yes
MS07070	Griffith Company	4/30/2008	2/28/2010	8/28/2012	\$168,434.00	\$125,504.00	Off-Road Diesel Equipment Retrofit Program	\$42,930.00	Yes
MS07071	Tiger 4 Equipment Leasing	9/19/2008	7/18/2010	1/18/2013	\$210,937.00	\$108,808.97	Off-Road Diesel Equipment Retrofit Program	\$102,128.03	Yes
MS07072	City of Culver City Transportation De	4/4/2008	2/3/2010	8/3/2011	\$72,865.00	\$72,865.00	Off-Road Diesel Equipment Retrofit Program	\$0.00	Yes
MS07075	Dan Copp Crushing	9/17/2008	7/16/2010	1/16/2012	\$73,600.00	\$40,200.00	Off-Road Diesel Equipment Retrofit Program	\$33,400.00	Yes
MS07076	Reed Thomas Company, Inc.	8/15/2008	6/14/2010	3/14/2012	\$339,073.00	\$100,540.00	Off-Road Diesel Equipment Retrofit Program	\$238,533.00	Yes
MS07077	USA Waste of California, Inc.	5/1/2009	12/31/2014		\$160,000.00	\$160,000.00	Five Nat. Gas Refuse Trucks (Santa Ana)	\$0.00	Yes
MS07079	Riverside County Transportation Co	1/30/2009	7/29/2013	12/31/2011	\$20,000.00	\$15,165.45	BikeMetro Website Migration	\$4,834.55	Yes
MS07091	BusWest	10/16/2009	3/15/2010		\$33,660.00	\$33,660.00	Provide Lease for 2 CNG School Buses	\$0.00	Yes
MS07092	Riverside County Transportation Co	9/1/2010	10/31/2011		\$350,000.00	\$350,000.00	"511" Commuter Services Campaign	\$0.00	Yes
Total: 50									
Closed/Inco	omplete Contracts								
ML07045	City of Inglewood	2/6/2009	4/5/2015		\$75,000.00	\$25,000.00	3 H.D. Nat. Gas Vehicles	\$50,000.00	No
MS07004	BusWest	7/2/2007	7/1/2009		\$90,928.00	\$68,196.00	Provide Lease for 2 CNG School Buses	\$22,732.00	No
MS07066	Skanska USA Civil West California D	6/28/2008	4/27/2010	10/27/2010	\$111,700.00	\$36,128.19	Off-Road Diesel Equipment Retrofit Program	\$75,571.81	No
MS07073	PEED Equipment Co.	10/31/2008	8/30/2010		\$11,600.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$11,600.00	No
Total: 4									
Open/Com	olete Contracts								
ML07023	City of Riverside	6/20/2008	10/19/2014	7/19/2016	\$462,500.00	\$461,476.42	CNG Station Expansion/Purch. 14 H.D. Vehi	\$1,023.58	Yes
ML07024	City of Garden Grove	3/7/2008	9/6/2014	7/6/2016	\$75,000.00	\$75,000.00	Three H.D. CNG Vehicles	\$0.00	Yes
ML07043	City of Redondo Beach	9/28/2008	7/27/2014	10/27/2016	\$125,000.00	\$125,000.00	Five H.D. CNG Transit Vehicles	\$0.00	Yes
MS07008	City of Los Angeles, Department of T	9/18/2009	5/17/2020	9/17/2017	\$1,900,000.00	\$1,900,000.00	Purchase 95 Transit Buses	\$0.00	Yes
MS07009	Orange County Transportation Autho	5/14/2008	4/13/2016		\$800,000.00	\$800,000.00	Purchase 40 Transit Buses	\$0.00	Yes
MS07022	CSULA Hydrogen Station and Resea	10/30/2009	12/29/2015	10/29/2019	\$250,000.00	\$250,000.00	New Hydrogen Fueling Station	\$0.00	Yes
MS07049	Palm Springs Disposal Services	10/23/2008	11/22/2014	9/22/2016	\$96,000.00	\$96,000.00	Three Nat. Gas Refuse Trucks	\$0.00	Yes
MS07054	Republic Services, Inc.	3/7/2008	9/6/2014	9/6/2016	\$1,280,000.00	\$1,280,000.00	40 Nat. Gas Refuse Trucks	\$0.00	Yes
MS07078	USA Waste of California, Inc.	5/1/2009	12/31/2014	12/31/2015	\$256,000.00	\$256,000.00	Eight Nat. Gas Refuse Trucks (Dewey's)	\$0.00	Yes

	Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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FY 2007-2008 Contracts

Open Conti	racts								
ML08028	City of Santa Monica	9/11/2009	9/10/2016	5/10/2019	\$600,000.00	\$0.00	24 CNG Heavy-Duty Vehicles	\$600,000.00	No
ML08030	City of Azusa	5/14/2010	3/13/2016		\$25,000.00	\$0.00	1 CNG Heavy-Duty Vehicle	\$25,000.00	No
ML08043	City of Desert Hot Springs	9/25/2009	3/24/2016		\$25,000.00	\$0.00	1 CNG Heavy-Duty Vehicle	\$25,000.00	No
MS08007	United Parcel Service West Region	12/10/2008	10/9/2014	4/9/2019	\$300,000.00	\$0.00	10 H.D. Nat. Gas Vehicles	\$300,000.00	No
MS08013	United Parcel Service West Region	12/10/2008	10/9/2014	3/9/2019	\$480,000.00	\$216,000.00	12 H.D. Nat. Gas Yard Tractors	\$264,000.00	No
MS08058	Clean Energy Fuels Corp.	11/26/2009	3/25/2016	3/25/2017	\$400,000.00	\$320,000.00	New CNG Station - Ontario Airport	\$80,000.00	No
MS08068	Regents of the University of Californi	11/5/2010	11/4/2017	11/4/2019	\$400,000.00	\$0.00	Hydrogen Station	\$400,000.00	No
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Total: 7

Declined/Ca	ancelled Contracts								
ML08032	City of Irvine	5/1/2009	8/31/2010		\$9,000.00	\$0.00	36 Vehicles (Diagnostic)	\$9,000.00	No
ML08041	City of Los Angeles, Dept of Transpo	8/6/2010	7/5/2011	12/5/2011	\$8,800.00	\$0.00	73 Vehicles (Diagnostic)	\$8,800.00	No
ML08049	City of Cerritos	3/20/2009	1/19/2015	2/19/2017	\$25,000.00	\$0.00	1 CNG Heavy-Duty Vehicle	\$25,000.00	No
ML08051	City of Colton				\$75,000.00	\$0.00	3 CNG Heavy-Duty Vehicles	\$75,000.00	No
MS08002	Orange County Transportation Autho				\$1,500,000.00	\$0.00	Big Rig Freeway Service Patrol	\$1,500,000.00	No
MS08008	Diversified Truck Rental & Leasing				\$300,000.00	\$0.00	10 H.D. Nat. Gas Vehicles	\$300,000.00	No
MS08010	Orange County Transportation Autho				\$10,000.00	\$0.00	20 H.D. Nat. Gas Vehicles	\$10,000.00	No
MS08011	Green Fleet Systems, LLC				\$10,000.00	\$0.00	30 H.D. Nat. Gas Vehicles	\$10,000.00	No
MS08052	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014	11/23/2015	\$100,000.00	\$0.00	New CNG Station - Fontana	\$100,000.00	No
MS08054	Clean Energy Fuels Corp.				\$400,000.00	\$0.00	New LNG Station - Fontana	\$400,000.00	No
MS08055	Clean Energy Fuels Corp.	11/26/2009	3/25/2016	3/25/2017	\$400,000.00	\$0.00	New LNG Station - Long Beach-Pier S	\$400,000.00	No
MS08059	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014		\$100,000.00	\$0.00	New CNG Station - San Bernardino	\$100,000.00	No
MS08060	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014		\$100,000.00	\$0.00	New CNG Station - Azusa	\$100,000.00	No
MS08062	Go Natural Gas	9/25/2009	1/24/2016	1/24/2017	\$400,000.00	\$0.00	New CNG Station - Rialto	\$400,000.00	No
MS08074	Fontana Unified School District	11/14/2008	12/13/2014		\$200,000.00	\$0.00	Expansion of Existing CNG station	\$200,000.00	No
MS08077	Hythane Company, LLC				\$144,000.00	\$0.00	Upgrade Station to Hythane	\$144,000.00	No

Closed Cor	ntracts								
ML08023	City of Villa Park	11/7/2008	10/6/2012		\$6,500.00	\$5,102.50	Upgrade of Existing Refueling Facility	\$1,397.50	Yes
ML08027	Los Angeles County Department of P	7/20/2009	1/19/2011	1/19/2012	\$6,901.00	\$5,124.00	34 Vehicles (Diagnostic)	\$1,777.00	Yes
ML08029	City of Gardena	3/19/2009	1/18/2015		\$25,000.00	\$25,000.00	1 Propane Heavy-Duty Vehicle	\$0.00	Yes
ML08031	City of Claremont	3/27/2009	3/26/2013	3/26/2015	\$97,500.00	\$97,500.00	Upgrade of Existing CNG Station, Purchase	\$0.00	Yes
ML08033	County of San Bernardino Public Wo	4/3/2009	2/2/2010		\$14,875.00	\$14,875.00	70 Vehicles (Diagnostic)	\$0.00	Yes
ML08034	County of San Bernardino Public Wo	3/27/2009	7/26/2015		\$150,000.00	\$150,000.00	8 CNG Heavy-Duty Vehicles	\$0.00	Yes
ML08035	City of La Verne	3/6/2009	11/5/2009		\$11,925.00	\$11,925.00	53 Vehicles (Diagnostic)	\$0.00	Yes

Construct Construct <thconstruct< th=""> <thconstruct< th=""> <thc< th=""><th>Comt #</th><th>Contractor</th><th>Ctart Data</th><th>Original End Date</th><th>Amended End Date</th><th>Contract Value</th><th>Domittod</th><th>Design Description</th><th>Award Balance</th><th>Billing</th></thc<></thconstruct<></thconstruct<>	Comt #	Contractor	Ctart Data	Original End Date	Amended End Date	Contract Value	Domittod	Design Description	Award Balance	Billing
Number City of Genotale Si20/2000 \$19/2015 \$52,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00 \$2,000.00	Cont.#	Contractor	Start Date				Remitted	Project Description		Complete?
Nu.0803 City of Rancho Palos Verdes 6/52009 8/4/2015 \$50,000.00 2/LPG Transit Buses \$0.00 Yes Mu.08044 City of Chino 3/19/2009 3/18/2015 \$25,000.00 1 CNG Heavy-Duty Vehicle \$0.00 Yes Mu.08046 City of Santa Clarita 2/20/2009 6/19/2015 \$25,000.00 1 CNG Heavy-Duty Vehicle \$0.00 Yes Mu.08047 City of Cluvic City Transportation De 5/12/2009 8/11/2015 \$55,000.00 1 CNG Heavy-Duty Vehicle \$0.00 Yes Mu.08047 City of Santa Clarita 2/20/2016 \$52,000.00 \$50.00 1 CNG Heavy-Duty Vehicle \$0.00 Yes Mu.08040 City of Ione \$1/2009 \$1/480,000.00 \$1,449,090.00 1 CNG Heavy-Duty Vehicle \$0.00 Yes Mu50800 Burtee Waste Industries, Inc. 10/22/2018 \$1/42/00.00 \$1,440,000.00 1 Attemative Fuel School Bus Incentive Prograg \$0.000.00 Yes Mu508006 Burtee Waste Industries, Inc. 10/22/2014 10/22/2014 \$450,000.00 \$151.00.Ntt. Gas Vehicles \$0.000.00	-									
NLB894 City of Chino 3192209 31822015 \$25,000.00 \$22,000.00 1 NG Heavy-Duty Vehicle \$0.00 Yes NLB046 City of Partamount 2202009 61922010 \$3,213.00 \$3,213.00 \$1,010.00 \$4 Vehicles (Diagnosite) \$63.00 Yes NLB047 City of Claver City Transportation De 51220009 811/2015 \$155,000.00 \$6 CNG Heavy-Duty Vehicles \$0.00 Yes NLB084 City of Sama Carina 2020009 6192016 \$52,000.00 \$1,490.000.00 \$1,490.000.00 None Network \$50,000.00 \$14,000.00.00 \$14,400.00.00 \$14,400.00.00 \$14,400.00.00 \$14,400.00.00 \$14,400.00.00 \$14,400.00.00 \$14,400.00.00		,							•	
Nu.8945 City of Santa Clarita 2/20/2009 6/19/2010 \$3.150.00 14 Vehicles/Diagnetic) \$63.00 Yes Nu.808046 City of Paramount 2/20/2009 2/19/2015 \$25,000.00 1 CNG Heary-Duty Vehicle \$0.00 Yes Nu.80804 City of Culver City Transportation De 2/20/2009 6/19/2015 \$55,000.00 5 (NO Heary-Duty Vehicles \$0.00 Yes Nu.80806 City of Invine 5/1/2009 5/1/2009 5/1/2009 5 (S0.00.00 S0.00.00 Too Heary-Duty Vehicles \$0.00 No Nu.80806 Lity of Invine 5/1/2008 5/1/2008 5/1.400.000.00 \$1.400.000.00 Alternative Fuel School Bus Incentive Progra \$80.000.00 Yes No56000 Bus/West S/2/2008 1/2/2/2014 1/2/2/2015 \$450.000.00 \$1.400.000.00 1 EUN Kes \$80.000 Yes No56000 Bus/West S/2/2008 1/2/2/2014 1/2/2/2015 \$450.000.00 \$450.000.00 \$450.000.00 Yes \$30.000 Yes No560000 Low Angeles Worid Airports <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>										
NL.88046 City of Paramount 2/20/2009 2/19/2015 S25,000.00 \$25,000.00 \$25,000.00 \$25,000.00 \$0.00 Feasury-Duty Vehicle \$0.00 Yes NL.88047 City of Culver City Transportation De \$1/12/2015 \$150,000.00 \$150,000.00 \$0.00 Feasury-Duty Vehicle \$0.00 Yes NL.88040 City of Santa Clarina \$2/20/2008 \$1/12/015 \$50,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00 \$1.400,000.00		,				. ,	. ,	, ,	•	
NLB8047 Cliv of Culver City Transportation De 5/12/2009 8/11/2015 \$150,000.00 \$150,000.00 \$CNG Heavy-Duty Vehicle \$0.00 Yes NL08080 City of Ixine 2/0/2009 6/18/2015 \$\$25,000.00 \$0.00 Tool Heavy-Duty Vehicle \$\$0.00 Yes NL08080 City of Ixine 5/1/2009 5/31/2015 \$\$50,000.00 \$\$1,490,999.66 Big Rig Freeway Service Patrol \$\$0.30 Yes MS808001 Los Angeles County MTA 12/1/2018 2/28/2009 \$1,480,000.00 \$1,440,000.00 Alternative Fuel School Bus Incentive Progra \$\$0.00 Yes MS808005 Burritee Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 \$450,000.00 \$1 H.D. Nat. Gas Vehicles \$\$0.00 Yes MS808005 Burritee Waste Industries, Inc. 10/23/2008 11/22/2014 \$870,000.00 \$450,000.00 \$1 H.D. Nat. Gas Vehicles \$\$0.00 Yes MS808015 Viscomite Waste Industries, Inc. 10/23/2008 11/22/2014 \$870,000.00 \$810,000.00 \$1 H.D. Nat. Gas Vehicles \$\$0.00										
NL.98048 City of Santa Clarita 22/20/2009 6/19/2015 \$25,000.00 \$25,000.00 1 CNG Heavy-Duty Vehicle \$0,000 No NL.08800 City of Invine 5/1/2009 5/31/2015 \$56,000.00 \$10,000.00 \$14,000.000 \$14,000.000 \$14,000.000 \$14,000.000 \$14,000.000 \$14,000.000 \$14,000.000 \$14,000.000 \$14,000.000 \$14,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.000 \$15,000.0		,					. ,	, ,	•	
ML8080 City of Irvine 5/1/2009 5/31/2015 \$50,000.00 \$0.00 Two Heavy-Duty Nat. Gas Vehicles \$50,000.00 No MS08001 Los Angeles County MTA 12/10/2010 6/9/2014 \$1,500.000.00 \$1,499.999.66 Big Rig Freeway Service Patrol \$0.34 Yes MS08004 BusWest 5/2/2008 12/31/2008 \$1,440.000.00 \$1,440.000.00 Attemative Fuel School Bus Incentive Progra \$0.00 Yes MS08004 BusWest 5/2/2008 11/2/2014 10/2/2/2015 \$450,000.00 \$14.40,000.00 Attemative Fuel School Bus Incentive Progra \$0.00 Yes MS08006 Burrite Waste Industries, Inc. 10/2/2/2014 10/2/2/2015 \$450,000.00 \$17.00.00 \$29 H.D. Nat. Gas Vehicles - Saugus \$0.00 Yes MS08001 City of San Bernardino 12/5/2008 6/4/2015 \$380,000.00 \$11.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01 \$1.10.21.01										
MS08001 Los Angeles County MTA 12/10/2010 6/9/2014 \$1,490,000.00 \$1,499,999.66 Big Rj Freeway Service Patrol \$0.34 Yes MS08003 A-Z Bus Sales, Inc. 5/2/2008 12/31/2008 2/28/2009 \$1,440,000.00 \$1,400,000.00 Alternative Fuel School Bus Incentive Progra \$0.00,00 Yes MS08005 Burrtec Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 \$450,000.00 15 H.D. Nat. Gas Vehicles - Azusa \$0.00 Yes MS08006 Burrtec Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 \$450,000.00 15 H.D. Nat. Gas Vehicles - Saugus \$0.00 Yes MS08006 Burrtec Waste Industries, Inc. 10/23/2008 12/32/2014 \$570,000.00 \$380,000.00 13 H.D. Nat. Gas Vehicles \$30,000.00 Yes MS080015 Yosemite Waters 51/2/2008 6/4/2015 \$380,000.00 \$317,813.60 11 H.D. Propane Vehicles \$62,186,40 Yes MS08005 TarasiVironmental Solutions, Inc. 1/22/2008 \$4/17/2015 \$318,00.00 \$17		,							•	
MS08003 A-Z Bus Sales, Inc. 5/2/2008 12/31/2008 2/28/2009 \$1.480,000.00 \$1.440,000.00 Alternative Fuel School Bus Incentive Progra \$80,000.00 Yes MS08004 BusWest 5/2/2008 12/31/2008 \$1.440,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes MS08005 Burrtec Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 \$540,000.00 29 H.D. Nat. Gas Vehicles - Saugus \$0.00 Yes MS08006 Los Angeles World Airports 12/2/2008 6/2/2008 5/2/2009 \$380,000.00 \$870,000.00 29 H.D. Nat. Gas Vehicles \$30,000.00 Yes MS08016 Cransvirformental Solutions, Inc. 1/2/2/2019 \$111/2015 \$180,000.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00 \$311,825.00<	-				1				1 7	
MS08004 BusWest 5/2/2008 12/31/2008 \$1,440,000.00 \$1,440,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes MS08005 Burrter Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 15 H.D. Nat. Gas Vehicles - Azusa \$0.00 Yes MS08006 Burrter Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 29 H.D. Nat. Gas Vehicles - Sugus \$0.00 Yes MS08006 Los Angeles World Airports 12/24/2008 12/23/2014 \$870,000.00 \$380,000.00 13 H.D. Nat. Gas Vehicles \$300,000.00 Yes MS08015 Yesemite Waster 5/1/22009 5/1/1/2010 \$330,000.00 13 H.D. Part. Gas Vehicles \$80,000.00 Yes MS08016 Transit/gency 12/18/2008 31/17,015 \$311,825.00 \$311,825.00 10 KeN LNex/CNS Station \$0.00 Yes MS08056 Clean Energy Fuels Corp. 11/26/2009 12/18/2009 \$400,000.00 \$400,000.00 New LNG/Xel Station - POLB-Anah. & 1 \$0.00 Yes MS08067									•	
MS08005 Burtte: Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 15 H.D. Nat. Gas Vehicles - Azusa \$0.00 Yes MS08006 Burtte: Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 \$450,000.00 15 H.D. Nat. Gas Vehicles - Saugus \$0.00 Yes MS08001 City of San Bernardino 12/24/2008 6/4/2015 \$330,000.00 \$360,000.00 13 H.D. Nat. Gas Vehicles \$30,000.00 Yes MS080016 Yosemite Waters 5/12/2008 6/14/2015 \$180,000.00 \$11.H.D. Propane Vehicles \$62,186.40 Yes MS08015 Yosemite Waters 5/12/2009 5/11/2015 \$180,000.00 \$11.F2.50.15 \$400,000.00 \$810,51.30.01 \$10.86264 Yes MS08025 City of Los Angeles, Bureau of Sanit 2/18/2009 12/17/2015 \$400,000.00 \$400,000.00 New LNG/CNG Station \$0.00 Yes MS08056 Clean Energy Fuels Corp. 11/26/209 2/25/2015 \$400,000.00 \$400,000.00 New LNG/CNG Station - Paraha. & 1 \$0.00 Yes	MS08003	A-Z Bus Sales, Inc.	5/2/2008	12/31/2008	2/28/2009	\$1,480,000.00	\$1,400,000.00	Alternative Fuel School Bus Incentive Progra	\$80,000.00	Yes
MS08006 Burttec Waste Industries, Inc. 10/23/2008 11/22/2014 10/22/2015 \$450,000.00 \$450,000.00 15 H.D. Nat. Gas Vehicles - Saugus \$0.00 Yes MS08009 Los Angeles World Airports 12/24/2008 12/23/2014 \$870,000.00 \$870,000.00 29 H.D. Nat. Gas Vehicles \$0.00 Yes MS08014 City of San Bernardino 12/5/2008 6/4/2015 \$180,000.00 \$117.813.60 11 H.D. Propare Vehicles \$\$2,786.40 Yes MS08015 Yosemite Waters 5/12/2009 12/11/2015 \$180,000.00 \$117.813.60 11 H.D. Propare Vehicles \$\$2,786.40 Yes MS08016 TransVironmental Solutions, Inc. 1/23/2009 12/11/2015 \$311,625.00 \$16 CNB Buses \$0.00 Yes MS08052 SunLine Transit Agency 12/18/2008 3/17/2015 \$400,000.00 \$400,000.00 New LNG/CNG Station \$0.00 Yes MS08056 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New LNG/CNG Station - LA-La Cienega \$0.00 Yes MS08061 <td>MS08004</td> <td>BusWest</td> <td>5/2/2008</td> <td>12/31/2008</td> <td></td> <td>\$1,440,000.00</td> <td>\$1,440,000.00</td> <td>Alternative Fuel School Bus Incentive Progra</td> <td>\$0.00</td> <td>Yes</td>	MS08004	BusWest	5/2/2008	12/31/2008		\$1,440,000.00	\$1,440,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS08009 Los Angeles World Airports 12/24/2008 12/23/2014 \$870,000.00 \$870,000.00 29 H.D. Nat. Gas Vehicles \$0.00 Yes MS08014 City of San Bernardino 12/5/2008 6/4/2015 \$330,000.00 \$360,000.00 13 H.D. Nat. Gas Vehicles \$30,000.00 Yes MS08015 Yosemite Waters 5/12/2009 5/11/2010 9/30/2011 \$227,198.00 \$80,351.34 Rideshare 2 School Program \$146,846.66 Yes MS08025 SunLine Transit Agency 12/18/2008 3/17/2015 \$311,625.00 \$311,625.00 \$2016 Buses \$0.00 Yes MS08056 City of Los Angeles, Bureau of Sant 2/18/2009 12/17/2015 \$400,000.00 \$400,000.00 New LNG Station - POLB-Anah. & I \$0.00 Yes MS08057 Citan Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - LA-La Cienega \$0.00 Yes MS08066 Clean Energy Fuels Corp. 11/20/2008 2/19/2014 \$10,500.00 Existing CNG Station Modifications \$0.00 Yes MS08066	MS08005	Burrtec Waste Industries, Inc.	10/23/2008	11/22/2014	10/22/2015	\$450,000.00	\$450,000.00	15 H.D. Nat. Gas Vehicles - Azusa	\$0.00	Yes
MS08014 City of San Bernardino 12/5/2008 6/4/2015 \$330,00.00 \$386,000.00 13 H.D. Nat. Gas Vehicles \$30,000.00 Yes MS08015 Yosemite Waters 5/12/2009 5/11/2015 \$180,000.00 \$117,813.60 11 H.D. Propane Vehicles \$62,186.40 Yes MS08016 TransVironmental Solutions, Inc. 1/2/3/2009 12/31/2010 \$227,198.00 \$80,351.34 Rideshare 2 School Program \$146,846.66 Yes MS08025 SunLine Transit Agency 12/18/2009 12/17/2015 \$400,000.00 New LNG/CNG Station \$0.00 Yes MS08056 Clean Energy Fuels Corp. 11/2/2/2009 3/3/2015 \$400,000.00 \$400,000.00 New CNG Station - CA-La Cienega \$0.00 Yes MS08056 Clean Energy Fuels Corp. 11/2/2/2009 3/3/2015 \$400,000.00 New CNG Station - La Cienega \$0.00 Yes MS08066 Clean Energy Fuels Corp. 11/2/2/2009 3/3/2015 \$400,000.00 \$400,000.00 Expansion of Existing Infrastructure \$0.00 Yes MS08066 Clean Energy Fuels Corp.	MS08006	Burrtec Waste Industries, Inc.	10/23/2008	11/22/2014	10/22/2015	\$450,000.00	\$450,000.00	15 H.D. Nat. Gas Vehicles - Saugus	\$0.00	Yes
MS08015 Yosemite Waters 5/12/2009 5/11/2015 \$180,00.00 \$117,813.60 11 H.D. Propane Vehicles \$62,186.40 Yes MS08016 TransVironmental Solutions, Inc. 1/23/2009 12/31/2010 9/30/2011 \$227,198.00 \$80,351.34 Rideshare 2 School Program \$146,846.66 Yes MS08022 SunLine Transit Agency 12/16/2008 3/17/2015 \$311,625.00 \$15 CNC Buses \$0.00 Yes MS08056 Clean Energy Fuels Corp. 12/16/2009 12/17/2015 \$400,000.00 \$400,000.00 New LNG/CNG Station \$0.00 Yes MS08057 Orange County Transportation Autho 5/14/2009 7/13/2015 \$400,000.00 \$400,000.00 New CNG Station - POLB-Anah. & I \$0.00 Yes MS08061 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$75,000.00 \$400,000.00 New CNG Station - Addifications \$0.00 Yes MS08066 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 Existing Infrastructure \$0.00 Yes MS08066	MS08009	Los Angeles World Airports	12/24/2008	12/23/2014		\$870,000.00	\$870,000.00	29 H.D. Nat. Gas Vehicles	\$0.00	Yes
MS08016 TransVironmental Solutions, Inc. 1/23/2009 12/31/2010 9/30/2011 \$227,198.00 \$80,351.34 Rideshare 2 School Program \$146,846.66 Yes MS08022 SunLine Transit Agency 12/18/2008 3/17/2015 \$311,625.00 \$311,625.00 \$15 CNG Buses \$0.00 Yes MS08053 City of Los Angeles, Bureau of Sanit 2/18/2009 12/17/2015 \$400,000.00 New LNG/CNG Station \$0.00 Yes MS08056 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New LNG/CNG Station - Carden Grove \$0.00 Yes MS08051 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$400,000.00 \$400,000.00 New CNG Station - LALa Cienega \$0.00 Yes MS08066 Pupil Transportation Author 1/26/2009 3/3/2015 \$75,000.00 \$75,000.00 Expansion of Existing Infrastructure \$0.00 Yes MS08066 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08067 <td>MS08014</td> <td>City of San Bernardino</td> <td>12/5/2008</td> <td>6/4/2015</td> <td></td> <td>\$390,000.00</td> <td>\$360,000.00</td> <td>13 H.D. Nat. Gas Vehicles</td> <td>\$30,000.00</td> <td>Yes</td>	MS08014	City of San Bernardino	12/5/2008	6/4/2015		\$390,000.00	\$360,000.00	13 H.D. Nat. Gas Vehicles	\$30,000.00	Yes
MS08022 SunLine Transit Agency 12/18/2008 3/17/2015 \$311,625.00 \$311,625.00 15 CNG Buses \$0.00 Yes MS08053 City of Los Angeles, Bureau of Sanit 2/18/2009 12/17/2015 \$400,000.00 \$400,000.00 New LNG/CNG Station \$0.00 Yes MS08056 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New LNG Station - POLB-Anah. & I \$0.00 Yes MS08057 Orange County Transportation Autho 5/14/2009 7/13/2015 \$400,000.00 \$400,000.00 New CNG Station - Garden Grove \$0.00 Yes MS08061 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$400,000.00 \$Ves Gatation - Garden Grove \$0.00 Yes MS08064 Hemet Unified School District 11/20/2008 7/19/2014 \$10,500.00 \$tisting CNG Station Modifications \$0.00 Yes MS08066 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$4400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08072 Clean Energy Fu	MS08015	Yosemite Waters	5/12/2009	5/11/2015		\$180,000.00	\$117,813.60	11 H.D. Propane Vehicles	\$62,186.40	Yes
MS08053 City of Los Angeles, Bureau of Sanit 2/18/2009 12/17/2015 \$400,000.00 \$400,000.00 New LNG/CNG Station \$0.00 Yes MS08056 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New LNG Station - POLB-Anah. & I \$0.00 Yes MS08057 Orange County Transportation Autho 5/14/2009 3/3/2015 \$400,000.00 \$400,000.00 New LNG Station - Carden Grove \$0.00 Yes MS08056 Clean Energy Fuels Corp. 12/2/2009 3/3/2015 \$400,000.00 New CNG Station - Carden Grove \$0.00 Yes MS08064 Hemet Unified School District 1/9/2009 3/8/2015 \$75,000.00 \$275,000.00 Existing CNG Station Modifications \$0.00 Yes MS08066 Pupil Transportation Cooperative 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Paim Spring Airport \$0.00 Yes MS08070 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$63,000.00 New CNG Station - Paramount \$0.00 Yes	MS08016	TransVironmental Solutions, Inc.	1/23/2009	12/31/2010	9/30/2011	\$227,198.00	\$80,351.34	Rideshare 2 School Program	\$146,846.66	Yes
MS08056 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New LNG Station - POLB-Anah. & I \$0.00 Yes MS08057 Orange County Transportation Autho 5/14/2009 7/13/2015 \$400,000.00 \$400,000.00 New CNG Station - Garden Grove \$0.00 Yes MS08051 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$400,000.00 \$400,000.00 New CNG Station - LALa Cienega \$0.00 Yes MS08066 Hemet Unified School District 1/9/2009 3/8/2015 \$75,000.00 Expansion of Existing Infrastructure \$0.00 Yes MS08066 Pupit Transportation Cooperative 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station Modifications \$0.00 Yes MS08067 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08071 ABC Unified School District 1/16/2009 1/15/2015 \$400,000.00 \$400,000.00 New CNG Station - Norwalk \$45,756.62 Yes MS08073 <td>MS08022</td> <td>SunLine Transit Agency</td> <td>12/18/2008</td> <td>3/17/2015</td> <td></td> <td>\$311,625.00</td> <td>\$311,625.00</td> <td>15 CNG Buses</td> <td>\$0.00</td> <td>Yes</td>	MS08022	SunLine Transit Agency	12/18/2008	3/17/2015		\$311,625.00	\$311,625.00	15 CNG Buses	\$0.00	Yes
MS8057 Orange County Transportation Autho 5/14/2009 7/13/2015 \$400,000.00 \$400,000.00 New CNG Station - Garden Grove \$0.00 Yes MS80561 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$400,000.00 \$400,000.00 New CNG Station - LALa Cienega \$0.00 Yes MS80561 Clean Energy Fuels Corp. 12/4/2009 3/8/2015 \$75,000.00 \$75,000.00 Expansion of Existing Infrastructure \$0.00 Yes MS80565 Pupil Transportation Cooperative 11/20/2008 7/19/2014 \$10,500.00 \$10,500.00 Existing CNG Station Modifications \$0.00 Yes MS80566 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS80571 ABC Unified School District 1/16/2009 1/15/2015 \$63,000.00 \$400,000.00 New CNG Station - Burbank \$45,756.62 Yes MS80877 Clean Energy Fuels Corp. 11/26/2009 3/3/2015 \$400,000.00 \$400,000.00 New CNG Station - Norwalk \$450,756.62 <t< td=""><td>MS08053</td><td>City of Los Angeles, Bureau of Sanit</td><td>2/18/2009</td><td>12/17/2015</td><td></td><td>\$400,000.00</td><td>\$400,000.00</td><td>New LNG/CNG Station</td><td>\$0.00</td><td>Yes</td></t<>	MS08053	City of Los Angeles, Bureau of Sanit	2/18/2009	12/17/2015		\$400,000.00	\$400,000.00	New LNG/CNG Station	\$0.00	Yes
MS08061 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$400,000.00 \$400,000.00 New CNG Station - L.ALa Cienega \$0.00 Yes MS08064 Hemet Unified School District 1/9/2009 3/8/2015 \$75,000.00 \$75,000.00 Expansion of Existing Infrastructure \$0.00 Yes MS08065 Pupil Transportation Cooperative 11/20/2008 7/19/2014 \$10,500.00 \$10,500.00 Existing CNG Station Modifications \$0.00 Yes MS08066 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08070 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08071 ABC Unified School District 1/16/2009 1/15/2015 \$63,000.00 \$863,000.00 New CNG Station - Burbank \$445,756.62 Yes MS08072 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Norwalk \$445,756.62	MS08056	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		\$400,000.00	\$400,000.00	New LNG Station - POLB-Anah. & I	\$0.00	Yes
MS08064 Hemet Unified School District 1/9/2009 3/8/2015 \$75,000.00 \$75,000.00 Expansion of Existing Infrastructure \$0.00 Yes MS08065 Pupil Transportation Cooperative 11/20/2008 7/19/2014 \$10,500.00 \$10,500.00 Existing CNG Station Modifications \$0.00 Yes MS08066 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08070 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08071 ABC Unified School District 1/16/2009 1/15/2015 \$63,000.00 \$63,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08072 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$354,243.38 New CNG Station - Norwalk \$457,576.62 Yes MS08075 Disneyland Resort 12/10/2008 2/1/2015 \$200,000.00 \$200,000.00 Expansion of Existing CNG Infrastructure \$0.00 <td>MS08057</td> <td>Orange County Transportation Autho</td> <td>5/14/2009</td> <td>7/13/2015</td> <td></td> <td>\$400,000.00</td> <td>\$400,000.00</td> <td>New CNG Station - Garden Grove</td> <td>\$0.00</td> <td>Yes</td>	MS08057	Orange County Transportation Autho	5/14/2009	7/13/2015		\$400,000.00	\$400,000.00	New CNG Station - Garden Grove	\$0.00	Yes
MS08065 Pupil Transportation Cooperative 11/20/2008 7/19/2014 \$10,500.00 \$10,500.00 Existing CNG Station Modifications \$0.00 Yes MS08066 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08070 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08071 ABC Unified School District 1/16/2009 1/15/2015 \$63,000.00 \$800,000.00 New CNG Station - Paramount \$0.00 Yes MS08072 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$400,000.00 \$354,243.38 New CNG Station - Burbank \$45,756.62 Yes MS08073 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$200,000.00 Expansion of Existing CNG Infrastructure \$0.00 Yes MS08075 Disneyland Resort 12/10/2008 2/1/2015 \$200,000.00 \$200,000.00 Expansion of Existing CNG Infrastructure \$0.00 Yes	MS08061	Clean Energy Fuels Corp.	12/4/2009	3/3/2015		\$400,000.00	\$400,000.00	New CNG Station - L.ALa Cienega	\$0.00	Yes
MS08066 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08070 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Palm Spring Airport \$0.00 Yes MS08071 ABC Unified School District 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Paramount \$0.00 Yes MS08071 ABC Unified School District 11/16/2009 11/15/2015 \$63,000.00 \$400,000.00 New CNG Station - Burbank \$45,756.62 Yes MS08073 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Norwalk \$0.00 Yes MS08075 Disneyland Resort 12/10/2008 2/1/2015 \$200,000.00 \$200,000.00 Expansion of Existing CNG Infrastructure \$0.00 Yes MS09002 A-Z Bus Sales, Inc. 11/7/2008 12/31/2019 \$2,520,000.00 \$2,460,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 <td< td=""><td>MS08064</td><td>Hemet Unified School District</td><td>1/9/2009</td><td>3/8/2015</td><td></td><td>\$75,000.00</td><td>\$75,000.00</td><td>Expansion of Existing Infrastructure</td><td>\$0.00</td><td>Yes</td></td<>	MS08064	Hemet Unified School District	1/9/2009	3/8/2015		\$75,000.00	\$75,000.00	Expansion of Existing Infrastructure	\$0.00	Yes
MS08070 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Paramount \$0.00 Yes MS08071 ABC Unified School District 1/16/2009 1/15/2015 \$63,000.00 \$63,000.00 New CNG Station - Paramount \$0.00 Yes MS08071 ABC Unified School District 1/16/2009 3/3/2015 \$63,000.00 \$83,4243.38 New CNG Station - Burbank \$45,756.62 Yes MS08073 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Norwalk \$0.00 Yes MS08075 Disneyland Resort 12/10/2008 2/1/2015 \$200,000.00 \$220,000.00 Expansion of Existing CNG Infrastructure \$0.00 Yes MS08074 A-Z Bus Sales, Inc. 11/7/2008 12/31/2010 \$2,520,000.00 \$2,460,000.00 Alternative Fuel School Bus Incentive Progra \$60,000.00 Yes MS09004 A-Z Bus Sales, Inc. 1/30/2009 3/31/2009 \$156,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes <t< td=""><td>MS08065</td><td>Pupil Transportation Cooperative</td><td>11/20/2008</td><td>7/19/2014</td><td></td><td>\$10,500.00</td><td>\$10,500.00</td><td>Existing CNG Station Modifications</td><td>\$0.00</td><td>Yes</td></t<>	MS08065	Pupil Transportation Cooperative	11/20/2008	7/19/2014		\$10,500.00	\$10,500.00	Existing CNG Station Modifications	\$0.00	Yes
MS08071 ABC Unified School District 1/16/2009 1/15/2015 \$63,000.00 \$63,000.00 New CNG Station \$0.00 Yes MS08072 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$400,000.00 \$354,243.38 New CNG Station - Burbank \$45,756.62 Yes MS08073 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Norwalk \$0.00 Yes MS08075 Disneyland Resort 12/10/2008 2/1/2015 \$200,000.00 \$200,000.00 Expansion of Existing CNG Infrastructure \$0.00 Yes MS09002 A-Z Bus Sales, Inc. 11/7/2008 12/31/2010 \$2,520,000.00 \$2,460,000.00 Alternative Fuel School Bus Incentive Progra \$60,000.00 Yes MS09004 A-Z Bus Sales, Inc. 1/30/2009 3/31/2009 \$156,000.00 \$156,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes MS09047 BusWest 7/9/2010 12/31/2010 4/30/2011 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes <tr< td=""><td>MS08066</td><td>Clean Energy Fuels Corp.</td><td>11/26/2009</td><td>2/25/2015</td><td></td><td>\$400,000.00</td><td>\$400,000.00</td><td>New CNG Station - Palm Spring Airport</td><td>\$0.00</td><td>Yes</td></tr<>	MS08066	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		\$400,000.00	\$400,000.00	New CNG Station - Palm Spring Airport	\$0.00	Yes
MS08072 Clean Energy Fuels Corp. 12/4/2009 3/3/2015 \$400,000.00 \$354,243.38 New CNG Station - Burbank \$45,756.62 Yes MS08073 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Norwalk \$0.00 Yes MS08075 Disneyland Resort 12/10/2008 2/1/2015 \$200,000.00 \$200,000.00 Expansion of Existing CNG Infrastructure \$0.00 Yes MS09002 A-Z Bus Sales, Inc. 11/7/2008 12/31/2019 12/31/2010 \$2,520,000.00 \$2,460,000.00 Alternative Fuel School Bus Incentive Progra \$60,000.00 Yes MS09004 A-Z Bus Sales, Inc. 1/30/2009 3/31/2009 \$156,000.00 \$156,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes MS09047 BusWest 7/9/2010 12/31/2010 \$480,000.00 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes Total: 41 50.00 \$480,000.00 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes <td>MS08070</td> <td>Clean Energy Fuels Corp.</td> <td>11/26/2009</td> <td>2/25/2015</td> <td></td> <td>\$400,000.00</td> <td>\$400,000.00</td> <td>New CNG Station - Paramount</td> <td>\$0.00</td> <td>Yes</td>	MS08070	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		\$400,000.00	\$400,000.00	New CNG Station - Paramount	\$0.00	Yes
MS08073 Clean Energy Fuels Corp. 11/26/2009 2/25/2015 \$400,000.00 \$400,000.00 New CNG Station - Norwalk \$0.00 Yes MS08073 Disneyland Resort 12/10/2008 2/1/2015 \$200,000.00 \$200,000.00 Expansion of Existing CNG Infrastructure \$0.00 Yes MS09002 A-Z Bus Sales, Inc. 11/7/2008 12/31/2009 12/31/2010 \$2,520,000.00 \$2,460,000.00 Alternative Fuel School Bus Incentive Progra \$60,000.00 Yes MS09004 A-Z Bus Sales, Inc. 1/30/2009 3/31/2009 \$156,000.00 \$156,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes MS09047 BusWest 7/9/2010 12/31/2010 \$480,000.00 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes Total: 41 Total: 41 Total: 41 Total: 41 Total: 41 Total: 41	MS08071	ABC Unified School District	1/16/2009	1/15/2015		\$63,000.00	\$63,000.00	New CNG Station	\$0.00	Yes
MS08075 Disneyland Resort 12/10/2008 2/1/2015 \$200,000.00 \$200,000.00 Expansion of Existing CNG Infrastructure \$0.00 Yes MS09002 A-Z Bus Sales, Inc. 11/7/2008 12/31/2009 12/31/2010 \$2,520,000.00 \$2,460,000.00 Alternative Fuel School Bus Incentive Progra \$60,000.00 Yes MS09004 A-Z Bus Sales, Inc. 1/30/2009 3/31/2009 \$156,000.00 \$156,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes MS09047 BusWest 7/9/2010 12/31/2010 \$480,000.00 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes Total: 41 2/1/2010 \$430/2011 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes	MS08072	Clean Energy Fuels Corp.	12/4/2009	3/3/2015		\$400,000.00	\$354,243.38	New CNG Station - Burbank	\$45,756.62	Yes
MS09002 A-Z Bus Sales, Inc. 11/7/2008 12/31/2009 12/31/2010 \$2,520,000.00 \$2,460,000.00 Alternative Fuel School Bus Incentive Progra \$60,000.00 Yes MS09004 A-Z Bus Sales, Inc. 1/30/2009 3/31/2009 \$156,000.00 \$156,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes MS09047 BusWest 7/9/2010 12/31/2010 4/30/2011 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes Total: 41 Closed/Incomplete Contracts	MS08073	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		\$400,000.00	\$400,000.00	New CNG Station - Norwalk	\$0.00	Yes
MS09004 A-Z Bus Sales, Inc. 1/30/2009 3/31/2009 \$156,000.00 \$156,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes MS09047 BusWest 7/9/2010 12/31/2010 4/30/2011 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes Total: 41	MS08075	Disneyland Resort	12/10/2008	2/1/2015		\$200,000.00	\$200,000.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
MS09047 BusWest 7/9/2010 12/31/2010 4/30/2011 \$480,000.00 Alternative Fuel School Bus Incentive Progra \$0.00 Yes Total: 41 Closed/Incomplete Contracts	MS09002	A-Z Bus Sales, Inc.	11/7/2008	12/31/2009	12/31/2010	\$2,520,000.00	\$2,460,000.00	Alternative Fuel School Bus Incentive Progra	\$60,000.00	Yes
Total: 41 Closed/Incomplete Contracts	MS09004	A-Z Bus Sales, Inc.	1/30/2009	3/31/2009		\$156,000.00	\$156,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
Closed/Incomplete Contracts	MS09047	BusWest	7/9/2010	12/31/2010	4/30/2011	\$480,000.00	\$480,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
	Total: 41	1	1	L	1	1	1	· · · · · · · · · · · · · · · · · · ·		<u>I</u>
ML08025 Los Angeles County Department of P 10/30/2009 3/29/2011 \$75,000.00 \$0.00 150 Vehicles (Diagnostic) \$75,000.00 No	Closed/Inco	omplete Contracts								
	ML08025	Los Angeles County Department of P	10/30/2009	3/29/2011		\$75,000.00	\$0.00	150 Vehicles (Diagnostic)	\$75,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS08079	ABC Unified School District	1/16/2009	12/15/2009	12/15/2010	\$50,000.00	\$0.00	Maintenance Facility Modifications	\$50,000.00	No
Total: 2									
Open/Com	olete Contracts								
ML08024	City of Anaheim	7/9/2010	7/8/2017	1/8/2018	\$425,000.00	\$425,000.00	9 LPG Buses and 8 CNG Buses	\$0.00	Yes
ML08026	Los Angeles County Department of P	7/20/2009	7/19/2016		\$250,000.00	\$250,000.00	10 LPG Heavy-Duty Vehicles	\$0.00	Yes
ML08038	Los Angeles Department of Water an	7/16/2010	7/15/2017		\$1,050,000.00	\$1,050,000.00	42 CNG Heavy-Duty Vehicles	\$0.00	Yes
ML08040	City of Riverside	9/11/2009	9/10/2016	3/10/2019	\$455,500.00	\$455,500.00	16 CNG Vehicles, Expand CNG Station & M	\$0.00	Yes
ML08042	City of Ontario, Housing & Municipal	5/1/2009	1/31/2016		\$175,000.00	\$175,000.00	7 CNG Heavy-Duty Vehicles	\$0.00	Yes
ML08050	City of Laguna Beach Public Works	8/12/2009	4/11/2016	10/11/2016	\$75,000.00	\$75,000.00	3 LPG Trolleys	\$0.00	Yes
MS08012	California Cartage Company, LLC	12/21/2009	10/20/2015	4/20/2016	\$480,000.00	\$480,000.00	12 H.D. Nat. Gas Yard Tractors	\$0.00	Yes
MS08017	Omnitrans	12/13/2008	12/12/2015	12/12/2016	\$900,000.00	\$900,000.00	30 CNG Buses	\$0.00	Yes
MS08018	Los Angeles County Department of P	8/7/2009	10/6/2016	4/6/2018	\$60,000.00	\$60,000.00	2 CNG Vehicles	\$0.00	Yes
MS08019	Enterprise Rent-A-Car Company of L	2/12/2010	7/11/2016		\$300,000.00	\$300,000.00	10 CNG Vehicles	\$0.00	Yes
MS08020	Ware Disposal Company, Inc.	11/25/2008	2/24/2016		\$900,000.00	\$900,000.00	30 CNG Vehicles	\$0.00	Yes
MS08021	CalMet Services, Inc.	1/9/2009	1/8/2016	7/8/2016	\$900,000.00	\$900,000.00	30 CNG Vehicles	\$0.00	Yes
MS08063	Go Natural Gas	9/25/2009	1/24/2016	1/24/2017	\$400,000.00	\$400,000.00	New CNG Station - Moreno Valley	\$0.00	Yes
MS08067	Trillium CNG	3/19/2009	6/18/2015	6/18/2016	\$311,600.00	\$254,330.00	New CNG Station	\$57,270.00	Yes
MS08069	Perris Union High School District	6/5/2009	8/4/2015	8/4/2016	\$225,000.00	\$225,000.00	New CNG Station	\$0.00	Yes
MS08076	Azusa Unified School District	10/17/2008	11/16/2014	1/31/2017	\$172,500.00	\$172,500.00	New CNG station and maint. Fac. Modificati	\$0.00	Yes
MS08078	SunLine Transit Agency	12/10/2008	6/9/2015	2/9/2016	\$189,000.00	\$189,000.00	CNG Station Upgrade	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2008	3-2009 Contracts								
Open Cont	racts								
ML09033	City of Beverly Hills	3/4/2011	5/3/2017	5/3/2018	\$550,000.00	\$100,000.00	10 Nat. Gas Heavy-Duty Vehicles & CNG St	\$450,000.00	No
ML09036	City of Long Beach Fleet Services B	5/7/2010	5/6/2017	5/6/2020	\$875,000.00	\$525,000.00	Purchase 35 LNG Refuse Trucks	\$350,000.00	No
ML09047	Los Angeles County Department of P	8/13/2014	8/12/2015	11/12/2015	\$400,000.00	\$0.00	Maintenance Facility Modifications	\$400,000.00	No
Total: 3									
Declined/C	ancelled Contracts								
ML09017	County of San Bernardino Public Wo	1/28/2010	7/27/2016		\$200,000.00	\$0.00	8 Nat. Gas Heavy-Duty Vehicles	\$200,000.00	No
ML09018	Los Angeles Department of Water an	7/16/2010	9/15/2012		\$850,000.00	\$0.00	Retrofit 85 Off-Road Vehicles w/DECS	\$850,000.00	No
ML09019	City of San Juan Capistrano Public	12/4/2009	11/3/2010		\$10,125.00	\$0.00	Remote Vehicle Diagnostics/45 Vehicles	\$10,125.00	No
ML09022	Los Angeles County Department of P				\$8,250.00	\$0.00	Remote Vehicle Diagnostics/15 Vehicles	\$8,250.00	No
ML09025	Los Angeles County Department of P	10/15/2010	12/14/2012	6/14/2013	\$50,000.00	\$0.00	Remote Vehicle Diagnostics/85 Vehicles	\$50,000.00	No
ML09028	Riverside County Waste Manageme				\$140,000.00	\$0.00	Retrofit 7 Off-Road Vehicles w/DECS	\$140,000.00	No
ML09039	City of Inglewood				\$310,000.00	\$0.00	Purchase 12 H.D. CNG Vehicles and Remot	\$310,000.00	No
ML09040	City of Cathedral City				\$83,125.00	\$0.00	Purchase 3 H.D. CNG Vehicles and Remote	\$83,125.00	No
ML09044	City of San Dimas				\$425,000.00	\$0.00	Install CNG Station and Purchase 1 CNG S	\$425,000.00	No
ML09045	City of Orange				\$125,000.00	\$0.00	Purchase 5 CNG Sweepers	\$125,000.00	No
MS09003	FuelMaker Corporation				\$296,000.00	\$0.00	Home Refueling Apparatus Incentives	\$296,000.00	No
Total: 11									
Closed Co	ntracts								
ML09007	City of Rancho Cucamonga	2/26/2010	4/25/2012		\$117,500.00	\$62,452.57	Maintenance Facility Modification	\$55,047.43	Yes
ML09012	City of Gardena	3/12/2010	11/11/2015		\$25,000.00	\$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	\$0.00	Yes
ML09013	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	\$144,470.00	\$128,116.75	Traffic Signal Synchr./Moreno Valley	\$16,353.25	Yes
ML09014	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	\$113,030.00	\$108,495.94	Traffic Signal Synchr./Corona	\$4,534.06	Yes
ML09015	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	\$80,060.00	\$79,778.52	Traffic Signal Synchr./Co. of Riverside	\$281.48	Yes
ML09016	County of San Bernardino Public Wo	1/28/2010	3/27/2014		\$50,000.00	\$50,000.00	Install New CNG Station	\$0.00	Yes
ML09020	County of San Bernardino	8/16/2010	2/15/2012		\$49,770.00	\$49,770.00	Remote Vehicle Diagnostics/252 Vehicles	\$0.00	Yes
ML09021	City of Palm Desert	7/9/2010	3/8/2012		\$39,450.00	\$38,248.87	Traffic Signal Synchr./Rancho Mirage	\$1,201.13	Yes
ML09024	Los Angeles County Department of P	10/15/2010	12/14/2012	6/14/2013	\$400,000.00	\$0.00	Maintenance Facility Modifications	\$400,000.00	No
ML09027	Los Angeles County Department of P	7/23/2010	3/22/2012	6/22/2012	\$150,000.00	\$150,000.00	Freeway Detector Map Interface	\$0.00	Yes
ML09030	City of Los Angeles GSD/Fleet Servi	6/18/2010	6/17/2011		\$22,310.00	\$22,310.00	Remote Vehicle Diagnostics/107 Vehicles	\$0.00	Yes
ML09034	City of La Palma	11/25/2009	6/24/2015		\$25,000.00	\$25,000.00	1 LPG Heavy-Duty Vehicle	\$0.00	Yes
MS09001	Administrative Services Co-Op/Long	3/5/2009	6/30/2012	12/31/2013	\$225,000.00	\$150,000.00	15 CNG Taxicabs	\$75,000.00	Yes
MS09005	Gas Equipment Systems, Inc.	6/19/2009	10/18/2010		\$71,000.00	\$71,000.00	Provide Temp. Fueling for Mountain Area C	\$0.00	Yes

Open/Complete Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML09008	City of Culver City Transportation De	1/19/2010	7/18/2016	7/18/2017	\$175,000.00	\$175,000.00	8 Nat. Gas Heavy-Duty Vehicles	\$0.00	Yes
ML09009	City of South Pasadena	11/5/2010	12/4/2016	3/4/2019	\$125,930.00	\$125,930.00	CNG Station Expansion	\$0.00	Yes
ML09010	City of Palm Springs	1/8/2010	2/7/2016		\$25,000.00	\$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	\$0.00	Yes
ML09011	City of San Bernardino	2/19/2010	5/18/2016		\$250,000.00	\$250,000.00	10 Nat. Gas Heavy-Duty Vehicles	\$0.00	Yes
ML09023	Los Angeles County Department of P	12/10/2010	12/9/2017		\$50,000.00	\$50,000.00	2 Heavy-Duty Alternative Fuel Transit Vehicl	\$0.00	Yes
ML09026	Los Angeles County Department of P	10/15/2010	10/14/2017	4/14/2019	\$150,000.00	\$80,411.18	3 Off-Road Vehicles Repowers	\$69,588.82	Yes
ML09029	City of Whittier	11/6/2009	4/5/2016		\$25,000.00	\$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	\$0.00	Yes
ML09031	City of Los Angeles, Department of	10/29/2010	10/28/2017		\$825,000.00	\$825,000.00	33 Nat. Gas Heavy-Duty Vehicles	\$0.00	Yes
ML09032	Los Angeles World Airports	4/8/2011	4/7/2018		\$175,000.00	\$175,000.00	7 Nat. Gas Heavy-Duty Vehicles	\$0.00	Yes
ML09035	City of Fullerton	6/17/2010	6/16/2017	12/16/2018	\$450,000.00	\$450,000.00	2 Heavy-Duty CNG Vehicles & Install CNG	\$0.00	Yes
ML09037	City of Redondo Beach	6/18/2010	6/17/2016		\$50,000.00	\$50,000.00	Purchase Two CNG Sweepers	\$0.00	Yes
ML09038	City of Chino	9/27/2010	5/26/2017		\$250,000.00	\$250,000.00	Upgrade Existing CNG Station	\$0.00	Yes
ML09041	City of Los Angeles, Bureau of Sanit	10/1/2010	9/30/2017		\$875,000.00	\$875,000.00	Purchase 35 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML09042	Los Angeles Department of Water an	12/10/2010	12/9/2017		\$1,400,000.00	\$1,400,000.00	Purchase 56 Dump Trucks	\$0.00	Yes
ML09043	City of Covina	10/8/2010	4/7/2017	10/7/2018	\$179,591.00	\$179,591.00	Upgrade Existing CNG Station	\$0.00	Yes
ML09046	City of Newport Beach	5/20/2010	5/19/2016		\$162,500.00	\$162,500.00	Upgrade Existing CNG Station, Maintenance	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2010	0-2011 Contracts								
Open Cont	racts								
ML11020	City of Indio	2/1/2013	3/31/2019	9/30/2019	\$30,000.00	\$0.00	Retrofit one H.D. Vehicles w/DECS, repower	\$30,000.00	No
ML11024	County of Los Angeles, Dept of Publi	12/5/2014	6/4/2022		\$90,000.00	\$0.00	Purchase 3 Nat. Gas H.D. Vehicles	\$90,000.00	No
ML11027	City of Los Angeles, Dept. of Genera	5/4/2012	7/3/2015	1/3/2016	\$300,000.00	\$300,000.00	Maintenance Facility Modifications	\$0.00	No
ML11029	City of Santa Ana	9/7/2012	3/6/2020		\$262,500.00	\$0.00	Expansion of Existing CNG Station, Install N	\$262,500.00	No
ML11032	City of Gardena	3/2/2012	9/1/2018	10/1/2020	\$102,500.00	\$0.00	Modify Maint. Facility, Expand CNG station,	\$102,500.00	No
ML11036	City of Riverside	1/27/2012	1/26/2019	3/26/2021	\$670,000.00	\$0.00	Install New CNG Station, Purchase 9 H.D. N	\$670,000.00	No
ML11038	City of Santa Monica	5/18/2012	7/17/2018		\$400,000.00	\$0.00	Maintenance Facility Modifications	\$400,000.00	No
ML11040	City of South Pasadena	5/4/2012	1/3/2019		\$30,000.00	\$0.00	Purchase 1 Nat. Gas H.D. Vehicle	\$30,000.00	No
ML11041	City of Santa Ana	9/7/2012	11/6/2018	5/6/2020	\$265,000.00	\$34,651.86	Purchase 7 LPG H.D. Vehicles, Retrofit 6 H.	\$230,348.14	No
ML11045	City of Newport Beach	2/3/2012	8/2/2018	8/2/2020	\$30,000.00	\$0.00	Purchase 1 Nat. Gas H.D. Vehicle	\$30,000.00	No
MS11062	Load Center	9/7/2012	1/6/2016	12/6/2016	\$175,384.00	\$169,883.00	Retrofit Six Off-Road Vehicles under Showc	\$5,501.00	No
MS11065	Temecula Valley Unified School Distr	8/11/2012	1/10/2019		\$50,000.00	\$0.00	Expansion of Existing CNG Station	\$50,000.00	No
MS11081	Metropolitan Stevedore Company	9/7/2012	1/6/2016		\$45,416.00	\$0.00	Install DECS on Two Off-Road Vehicles	\$45,416.00	No
MS11085	City of Long Beach Fleet Services B	8/23/2013	12/22/2016		\$159,012.00	\$0.00	Retrofit Seven H.D. Off-Road Vehicles Unde	\$159,012.00	No
MS11086	DCL America Inc.	6/7/2013	10/6/2016		\$500,000.00	\$318,191.96	Retrofit Eight H.D. Off-Road Vehicles Under	\$181,808.04	No
MS11091	California Cartage Company, LLC	4/5/2013	8/4/2016	2/4/2018	\$55,000.00	\$0.00	Retrofit Two H.D. Off-Road Vehicles Under	\$55,000.00	No
MS11092	Griffith Company	2/15/2013	6/14/2016	12/14/2017	\$390,521.00	\$0.00	Retrofit 17 H.D. Off-Road Vehicles Under Sh	\$390,521.00	No
Total: 17	· · · · · ·			1				1	1

Declined/Cancelled Contracts

Decimeu/C	anceneu contracts					
MS11013	Go Natural Gas, Inc.	\$150,000.00	\$0.00	New CNG Station - Huntington Beach	\$150,000.00	No
MS11014	Go Natural Gas, Inc.	\$150,000.00	\$0.00	New CNG Station - Santa Ana	\$150,000.00	No
MS11015	Go Natural Gas, Inc.	\$150,000.00	\$0.00	New CNG Station - Inglewood	\$150,000.00	No
MS11046	Luis Castro	\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11047	Ivan Borjas	\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11048	Phase II Transportation	\$1,080,000.00	\$0.00	Repower 27 Heavy-Duty Vehicles	\$1,080,000.00	No
MS11049	Ruben Caceras	\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11050	Carlos Arrue	\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11051	Francisco Vargas	\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11053	Jose Ivan Soltero	\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11054	Albino Meza	\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11059	Go Natural Gas	\$150,000.00	\$0.00	New Public Access CNG Station - Paramou	\$150,000.00	No
MS11063	Standard Concrete Products	\$310,825.00	\$0.00	Retrofit Two Off-Road Vehicles under Showc	\$310,825.00	No
MS11070	American Honda Motor Company	\$100,000.00	\$0.00	Expansion of Existing CNG Station	\$100,000.00	No
MS11072	Trillium USA Company DBA Californi	\$150,000.00	\$0.00	New Public Access CNG Station	\$150,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS11077	DCL America Inc.				\$263,107.00	\$0.00	Retrofit of 13 Off-Road Diesel Vehicles with	\$263,107.00	No
MS11083	Cattrac Construction, Inc.				\$500,000.00	\$0.00	Install DECS on Eight Off-Road Vehicles	\$500,000.00	No
MS11084	Ivanhoe Energy Services and Develo				\$66,750.00	\$0.00	Retrofit One H.D. Off-Road Vehicle Under S	\$66,750.00	No
MS11088	Diesel Emission Technologies				\$32,750.00	\$0.00	Retrofit Three H.D. Off-Road Vehicles Under	\$32,750.00	No
MS11089	Diesel Emission Technologies				\$9,750.00	\$0.00	Retrofit One H.D. Off-Road Vehicle Under S	\$9,750.00	No
MS11090	Diesel Emission Technologies				\$14,750.00	\$0.00	Retrofit One H.D. Off-Road Vehicle Under S	\$14,750.00	No
Total: 21					l				1
Closed Con	ntracts								
ML11007	Coachella Valley Association of Gov	7/29/2011	7/28/2012		\$250,000.00	\$249,999.96	Regional PM10 Street Sweeping Program	\$0.04	Yes
ML11035	City of La Quinta	11/18/2011	11/17/2012		\$25,368.00	\$25,368.00	Retrofit 3 On-Road Vehicles w/DECS	\$0.00	Yes
MS11001	Mineral LLC	4/22/2011	4/30/2013	4/30/2015	\$111,827.00	\$103,136.83	Design, Develop, Host and Maintain MSRC	\$8,690.17	Yes
MS11002	A-Z Bus Sales, Inc.	7/15/2011	12/31/2011	6/30/2013	\$1,705,000.00	\$1,705,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS11003	BusWest	7/26/2011	12/31/2011	12/31/2012	\$1,305,000.00	\$1,305,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS11004	Los Angeles County MTA	9/9/2011	2/29/2012		\$450,000.00	\$299,743.34	Clean Fuel Transit Service to Dodger Stadiu	\$150,256.66	Yes
MS11006	Orange County Transportation Autho	10/7/2011	2/29/2012	8/31/2012	\$268,207.00	\$160,713.00	Metrolink Service to Angel Stadium	\$107,494.00	Yes
MS11018	Orange County Transportation Autho	10/14/2011	1/31/2012		\$211,360.00	\$211,360.00	Express Bus Service to Orange County Fair	\$0.00	Yes
MS11052	Krisda Inc	9/27/2012	6/26/2013		\$120,000.00	\$120,000.00	Repower Three Heavy-Duty Vehicles	\$0.00	Yes
MS11056	The Better World Group	12/30/2011	12/29/2013	12/29/2015	\$206,836.00	\$186,953.46	Programmatic Outreach Services	\$19,882.54	Yes
MS11057	Riverside County Transportation Co	7/28/2012	3/27/2013		\$100,000.00	\$89,159.40	Develop and Implement 511 "Smart Phone"	\$10,840.60	Yes
MS11058	L A Service Authority for Freeway E	5/31/2013	4/30/2014		\$123,395.00	\$123,395.00	Implement 511 "Smart Phone" Application	\$0.00	Yes
MS11061	Eastern Municipal Water District	3/29/2012	5/28/2015		\$11,659.00	\$1,450.00	Retrofit One Off-Road Vehicle under Showc	\$10,209.00	Yes
MS11074	SunLine Transit Agency	5/11/2012	7/31/2012		\$41,849.00	\$22,391.00	Transit Service for Coachella Valley Festival	\$19,458.00	Yes
MS11080	Southern California Regional Rail Au	4/6/2012	7/31/2012		\$26,000.00	\$26,000.00	Metrolink Service to Auto Club Speedway	\$0.00	Yes
Total: 15									
Closed/Inco	omplete Contracts								
MS11064	City of Hawthorne	7/28/2012	8/27/2018	8/27/2019	\$175,000.00	\$0.00	New Limited Access CNG Station	\$175,000.00	No
MS11076	SA Recycling, LLC	5/24/2012	9/23/2015		\$424,801.00	\$0.00	Retrofit of 13 Off-Road Diesel Vehicles with	\$424,801.00	No
MS11082	Baumot North America, LLC	8/2/2012	12/1/2015		\$65,958.00	\$4,350.00	Install DECS on Four Off-Road Vehicles	\$61,608.00	Yes
Total: 3									
Open/Comp	olete Contracts								
ML11021	City of Whittier	1/27/2012	9/26/2018	6/26/2019	\$210,000.00	\$210,000.00	Purchase 7 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11022	City of Anaheim	3/16/2012	7/15/2018		\$150,000.00	\$150,000.00	Purchase of 5 H.D. Vehicles	\$0.00	Yes
ML11023	City of Rancho Cucamonga	4/20/2012	12/19/2018	9/19/2020	\$260,000.00	\$260,000.00	Expand Existing CNG Station, 2 H.D. Vehicl	\$0.00	Yes
ML11025	County of Los Angeles Department o	3/14/2014	9/13/2021		\$150,000.00	\$150,000.00	Purchase 5 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11026	City of Redlands	3/2/2012	10/1/2018		\$90,000.00	\$90,000.00	Purchase 3 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11028	City of Glendale	1/13/2012	5/12/2018		\$300,000.00	\$300,000.00	Purchase 10 H.D. CNG Vehicles	\$0.00	Yes
ML11030	City of Fullerton	2/3/2012	3/2/2018		\$109,200.00	\$109,200.00	Purchase 2 Nat. Gas H.D. Vehicles, Retrofit	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML11031	City of Culver City Transportation De	12/2/2011	12/1/2018		\$300,000.00	\$300,000.00	Purchase 10 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML11033	City of Los Angeles, Bureau of Sanit	3/16/2012	1/15/2019		\$1,080,000.00	\$1,080,000.00	Purchase 36 LNG H.D. Vehicles	\$0.00	Yes
ML11034	City of Los Angeles, Department of	5/4/2012	1/3/2019		\$630,000.00	\$630,000.00	Purchase 21 H.D. CNG Vehicles	\$0.00	Yes
ML11037	City of Anaheim	12/22/2012	12/21/2019		\$300,000.00	\$300,000.00	Purchase 12 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11039	City of Ontario, Housing & Municipal	1/27/2012	9/26/2018		\$180,000.00	\$180,000.00	Purchase 6 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11042	City of Chino	2/17/2012	4/16/2018		\$30,000.00	\$30,000.00	Purchase 1 Nat. Gas H.D. Vehicle, Repower	\$0.00	Yes
ML11043	City of Hemet Public Works	2/3/2012	2/2/2019		\$60,000.00	\$60,000.00	Purchase 2 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML11044	City of Ontario, Housing & Municipal	1/27/2012	6/26/2019		\$400,000.00	\$400,000.00	Expand Existing CNG Station	\$0.00	Yes
MS11008	USA Waste of California, Inc.	10/24/2013	4/23/2020		\$125,000.00	\$125,000.00	Expansion of Existing LCNG Station	\$0.00	Yes
MS11009	USA Waste of California, Inc.	10/24/2013	4/23/2020		\$125,000.00	\$125,000.00	Expansion of Existing LCNG Station	\$0.00	Yes
MS11010	Border Valley Trading	8/26/2011	10/25/2017	4/25/2020	\$150,000.00	\$150,000.00	New LNG Station	\$0.00	Yes
MS11011	EDCO Disposal Corporation	12/30/2011	4/29/2019		\$100,000.00	\$100,000.00	New CNG Station - Signal Hill	\$0.00	Yes
MS11012	EDCO Disposal Corporation	12/30/2011	4/29/2019		\$100,000.00	\$100,000.00	New CNG Station - Buena Park	\$0.00	Yes
MS11016	CR&R Incorporated	4/12/2013	10/11/2019		\$100,000.00	\$100,000.00	New CNG Station - Perris	\$0.00	Yes
MS11017	CR&R, Inc.	3/2/2012	2/1/2018		\$100,000.00	\$100,000.00	Expansion of existing station - Garden Grove	\$0.00	Yes
MS11019	City of Corona	11/29/2012	4/28/2020		\$225,000.00	\$225,000.00	Expansion of Existing CNG Station	\$0.00	Yes
MS11055	KEC Engineering	2/3/2012	8/2/2018	8/2/2019	\$200,000.00	\$200,000.00	Repower 5 H.D. Off-Road Vehicles	\$0.00	Yes
MS11060	Rowland Unified School District	8/17/2012	1/16/2019	1/16/2020	\$175,000.00	\$175,000.00	New Limited Access CNG Station	\$0.00	Yes
MS11066	Torrance Unified School District	11/19/2012	9/18/2018		\$42,296.00	\$42,296.00	Expansion of Existing CNG Station	\$0.00	Yes
MS11067	City of Redlands	5/24/2012	11/23/2018	11/23/2019	\$85,000.00	\$85,000.00	Expansion of Existing CNG Station	\$0.00	Yes
MS11068	Ryder System Inc.	7/28/2012	10/27/2018		\$175,000.00	\$175,000.00	New Public Access L/CNG Station (Fontana)	\$0.00	Yes
MS11069	Ryder System Inc.	7/28/2012	8/27/2018		\$175,000.00	\$175,000.00	New Public Access L/CNG Station (Orange)	\$0.00	Yes
MS11071	City of Torrance Transit Department	12/22/2012	1/21/2019	1/21/2020	\$175,000.00	\$166,250.00	New Limited Access CNG Station	\$8,750.00	Yes
MS11073	Los Angeles Unified School District	9/11/2015	2/10/2022		\$175,000.00	\$175,000.00	Expansion of Existing CNG Station	\$0.00	Yes
MS11079	Bear Valley Unified School District	2/5/2013	10/4/2019	1	\$175,000.00	\$175,000.00	New Limited Access CNG Station	\$0.00	Yes
MS11087	Cemex Construction Material Pacific,	10/16/2012	2/15/2016		\$448,766.00	\$448,760.80	Retrofit 13 H.D. Off-Road Vehicles Under Sh	\$5.20	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 201	1-2012 Contracts								
Open Cont	racts								
ML12014	City of Santa Ana	11/8/2013	8/7/2020		\$384,000.00	\$4,709.00	9 H.D. Nat. Gas & LPG Trucks, EV Charging	\$379,291.00	No
ML12015	City of Fullerton	4/25/2013	11/24/2020		\$40,000.00	\$10,000.00	HD CNG Vehicle, Expand CNG Station	\$30,000.00	No
ML12016	City of Cathedral City	1/4/2013	10/3/2019		\$60,000.00	\$0.00	CNG Vehicle & Electric Vehicle Infrastructur	\$60,000.00	No
ML12017	City of Los Angeles, Bureau of Sanit	6/26/2013	5/25/2020	11/25/2021	\$950,000.00	\$450,000.00	32 H.D. Nat. Gas Vehicles	\$500,000.00	No
ML12018	City of West Covina	10/18/2013	10/17/2020	1/17/2022	\$300,000.00	\$0.00	Expansion of Existing CNG Station	\$300,000.00	No
ML12041	City of Anaheim Public Utilities Depa	4/4/2014	11/3/2015	11/3/2016	\$68,977.00	\$0.00	EV Charging Infrastructure	\$68,977.00	No
ML12043	City of Hemet	6/24/2013	9/23/2019		\$60,000.00	\$0.00	Two Heavy-Duty Nat. Gas Vehicles	\$60,000.00	No
ML12045	City of Baldwin Park DPW	2/14/2014	12/13/2020		\$400,000.00	\$0.00	Install New CNG Station	\$400,000.00	No
ML12046	City of Irvine	8/11/2013	3/10/2021		\$30,000.00	\$0.00	One Heavy-Duty Nat. Gas Vehicle	\$30,000.00	No
ML12048	City of La Palma	1/4/2013	11/3/2018		\$20,000.00	\$0.00	Two Medium-Duty LPG Vehicles	\$20,000.00	No
ML12051	City of Bellflower	2/7/2014	2/6/2016	2/6/2017	\$270,000.00	\$0.00	EV Charging Infrastructure	\$270,000.00	No
ML12057	City of Coachella	8/28/2013	8/27/2019		\$57,456.00	\$0.00	Purchase One Nat. Gas H.D. Vehicle/Street	\$57,456.00	No
ML12090	City of Palm Springs	10/9/2015	10/8/2021		\$21,163.00	\$0.00	EV Charging Infrastructure	\$21,163.00	No
MS12001	Los Angeles County MTA	7/1/2012	4/30/2013		\$300,000.00	\$211,170.00	Clean Fuel Transit Service to Dodger Stadiu	\$88,830.00	No
MS12008	Bonita Unified School District	7/12/2013	12/11/2019		\$175,000.00	\$0.00	Construct New Limited-Acess CNG Station	\$175,000.00	No
MS12011	Southern California Gas Company	6/14/2013	6/13/2019	6/13/2020	\$150,000.00	\$0.00	Construct New Public-Access CNG Station -	\$150,000.00	No
MS12024	Southern California Gas Company	6/13/2013	12/12/2019	11/12/2020	\$150,000.00	\$0.00	Construct New Public-Access CNG Station -	\$150,000.00	No
MS12027	C.V. Ice Company, Inc.	5/17/2013	11/16/2019		\$75,000.00	\$0.00	Purchase 3 Medium-Heavy Duty Vehicles	\$75,000.00	No
MS12031	Final Assembly, Inc.	11/2/2012	11/1/2018		\$50,000.00	\$29,201.40	Purchase 2 Medium-Heavy Duty Vehicles	\$20,798.60	No
MS12033	Mike Diamond/Phace Management	12/22/2012	12/21/2018	6/21/2021	\$500,000.00	\$134,010.00	Purchase 20 Medium-Heavy Duty Vehicles	\$365,990.00	No
MS12034	Ware Disposal Company, Inc.	11/2/2012	11/1/2018	11/1/2020	\$133,070.00	\$74,763.00	Purchase 8 Medium-Heavy Duty Vehicles	\$58,307.00	No
MS12060	City of Santa Monica	4/4/2014	8/3/2017		\$500,000.00	\$333,734.27	Implement Westside Bikeshare Program	\$166,265.73	No
MS12067	Leatherwood Construction, Inc.	11/8/2013	3/7/2017		\$122,719.00	\$0.00	Retrofit Six Vehicles w/DECS - Showcase III	\$122,719.00	No
MS12075	CR&R Incorporated	7/27/2013	1/26/2021		\$100,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$100,000.00	No
MS12077	City of Coachella	6/14/2013	6/13/2020		\$225,000.00	\$0.00	Construct New CNG Station	\$225,000.00	No
MS12078	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		\$75,000.00	\$73,107.00	Maintenance Facility Modifications - Vernon	\$1,893.00	No
MS12079	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		\$75,000.00	\$0.00	Maintenance Facility Modifications - Boyle H	\$75,000.00	No
MS12080	City of Pasadena	11/8/2013	8/7/2020	8/7/2021	\$225,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$225,000.00	No
MS12081	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		\$75,000.00	\$75,000.00	Maintenance Facility Modifications - Santa A	\$0.00	No
MS12083	Brea Olinda Unified School District	7/30/2015	2/29/2024		\$59,454.00	\$0.00	Install New CNG Infrastructure	\$59,454.00	No
MS12084	Airport Mobil Inc.	12/6/2013	5/5/2020		\$150,000.00	\$0.00	Install New CNG Infrastructure	\$150,000.00	No
MS12086	SuperShuttle International, Inc.	3/26/2013	3/25/2019		\$225,000.00	\$202,500.00	Purchase 23 Medium-Heavy Duty Vehicles	\$22,500.00	No
MS12087	Los Angeles County MTA	8/29/2013	11/28/2015		\$125,000.00	\$125,000.00	Implement Rideshare Incentives Program	\$0.00	Yes
MS12088	Orange County Transportation Autho	12/6/2013	3/5/2016		\$125,000.00	\$0.00	Implement Rideshare Incentives Program	\$125,000.00	No

Cont #	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Departmen	Award Balance	Billing
Cont.# MS12089	Contractor Riverside County Transportation Co	10/18/2013	9/17/2015		\$250,000.00	\$105,747.48	Project Description Implement Rideshare Incentives Program	\$144,252.52	Complete? No
MS12009 MS12Hom	Mansfield Gas Equipment Systems	10/10/2013	9/17/2015		\$296,000.00	\$105,747.48	Home Refueling Apparatus Incentive Program	\$296,000.00	No
Total: 36	Mansheld Gas Equipment Systems				\$290,000.00	\$0.00	Home Reideling Apparatus Incentive Progra	\$290,000.00	NU
	ancelled Contracts			1 1	* *** *** **	A2 3 3		* ***	
ML12038	City of Long Beach Public Works				\$26,000.00	\$0.00	Electric Vehicle Charging Infrastructure	\$26,000.00	No
ML12040	City of Duarte Transit				\$30,000.00	\$0.00	One Heavy-Duty Nat. Gas Vehicle	\$30,000.00	No
ML12044	County of San Bernardino Public Wo				\$250,000.00	\$0.00	Install New CNG Station	\$250,000.00	No
ML12052	City of Whittier	3/14/2013	7/13/2019		\$165,000.00	\$0.00	Expansion of Existing CNG Station	\$165,000.00	No
ML12053	City of Mission Viejo				\$60,000.00	\$0.00	EV Charging Infrastructure	\$60,000.00	No
MS12007	WestAir Gases & Equipment				\$100,000.00	\$0.00	Construct New Limited-Acess CNG Station	\$100,000.00	No
MS12030	Complete Landscape Care, Inc.				\$150,000.00	\$0.00	Purchase 6 Medium-Heavy Duty Vehicles	\$150,000.00	No
MS12070	Valley Music Travel/CID Entertainme				\$99,000.00	\$0.00	Implement Shuttle Service to Coachella Mus	\$99,000.00	No
Total: 8									
Closed Cor	ntracts								
ML12013	City of Pasadena	10/19/2012	3/18/2015	9/18/2015	\$200,000.00	\$65,065.00	Electric Vehicle Charging Infrastructure	\$134,935.00	Yes
ML12019	City of Palm Springs	9/6/2013	7/5/2015		\$38,000.00	\$16,837.00	EV Charging Infrastructure	\$21,163.00	Yes
ML12021	City of Rancho Cucamonga	9/14/2012	1/13/2020		\$40,000.00	\$40,000.00	Four Medium-Duty Nat. Gas Vehicles	\$0.00	Yes
ML12023	County of Los Angeles Internal Servi	8/1/2013	2/28/2015		\$250,000.00	\$192,333.00	EV Charging Infrastructure	\$57,667.00	Yes
ML12037	Coachella Valley Association of Gov	3/14/2013	3/13/2014		\$250,000.00	\$250,000.00	Street Sweeping Operations	\$0.00	Yes
ML12049	City of Rialto Public Works	7/14/2014	9/13/2015		\$30,432.00	\$3,265.29	EV Charging Infrastructure	\$27,166.71	Yes
ML12050	City of Baldwin Park	4/25/2013	4/24/2014	10/24/2014	\$402,400.00	\$385,363.00	EV Charging Infrastructure	\$17,037.00	Yes
ML12054	City of Palm Desert	9/30/2013	2/28/2015		\$77,385.00	\$77,385.00	EV Charging Infrastructure	\$0.00	Yes
ML12056	City of Cathedral City	3/26/2013	5/25/2014		\$25,000.00	\$25,000.00	Regional Street Sweeping Program	\$0.00	Yes
ML12066	City of Manhattan Beach	1/7/2014	4/6/2015		\$5,900.00	\$5,900.00	Electric Vehicle Charging Infrastructure	\$0.00	Yes
MS12002	Orange County Transportation Autho	9/7/2012	4/30/2013		\$342,340.00	\$333,185.13	Express Bus Service to Orange County Fair	\$9,154.87	Yes
MS12003	Orange County Transportation Autho	7/20/2012	2/28/2013		\$234,669.00	\$167,665.12	Implement Metrolink Service to Angel Stadiu	\$67,003.88	Yes
MS12005	USA Waste of California, Inc.	10/19/2012	8/18/2013		\$75,000.00	\$75,000.00	Vehicle Maintenance Facility Modifications	\$0.00	Yes
MS12006	Waste Management Collection & Re	10/19/2012	8/18/2013		\$75,000.00	\$75,000.00	Vehicle Maintenance Facility Modifications	\$0.00	Yes
MS12012	Rim of the World Unified School Dist	12/20/2012	5/19/2014		\$75,000.00	\$75,000.00	Vehicle Maintenance Facility Modifications	\$0.00	Yes
MS12059	Orange County Transportation Autho	2/28/2013	12/27/2014		\$75,000.00	\$75,000.00	Maintenance Facilities Modifications	\$0.00	Yes
MS12061	Orange County Transportation Autho	3/14/2014	3/13/2017		\$224,000.00	\$114,240.00	Transit-Oriented Bicycle Sharing Program	\$109,760.00	Yes
MS12062	Fraser Communications	12/7/2012	5/31/2014		\$998,669.00	\$989,218.49	Develop & Implement "Rideshare Thursday"	\$9,450.51	Yes
MS12064	Anaheim Transportation Network	3/26/2013	12/31/2014		\$127,296.00	\$56,443.92	Implement Anaheim Circulator Service	\$70,852.08	Yes
MS12065	Orange County Transportation Autho	7/27/2013	11/30/2013		\$43,933.00	\$14,832.93	Ducks Express Service to Honda Center	\$29,100.07	Yes
MS12068	Southern California Regional Rail Au	3/1/2013	9/30/2013		\$57,363.00	\$47,587.10	Implement Metrolink Service to Autoclub Sp	\$9,775.90	Yes
MS12069	City of Irvine	8/11/2013	2/28/2014		\$45,000.00	\$26,649.41	Implement Special Transit Service to Solar	\$18,350.59	Yes
MS12076	City of Ontario, Housing & Municipal	3/8/2013	4/7/2015		\$75,000.00	\$75,000.00	Maintenance Facilities Modification	\$0.00	Yes
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Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS12085	Bear Valley Unified School District	4/25/2013	6/24/2014		\$75,000.00	\$75,000.00	Maintenance Facility Modifications	\$0.00	Yes
Total: 24					L				
Open/Com	olete Contracts								
ML12020	City of Los Angeles, Department of	9/27/2012	3/26/2019	3/26/2020	\$450,000.00	\$450,000.00	15 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML12022	City of La Puente	12/6/2013	6/5/2020		\$110,000.00	\$110,000.00	2 Medium-Duty and Three Heavy-Duty CNG	\$0.00	Yes
ML12039	City of Redlands	2/8/2013	10/7/2019		\$90,000.00	\$90,000.00	Three Heavy-Duty Nat. Gas Vehicles	\$0.00	Yes
ML12042	City of Chino Hills	1/18/2013	3/17/2017		\$87,500.00	\$87,500.00	Expansion of Existing CNG Station	\$0.00	Yes
ML12047	City of Orange	2/1/2013	1/31/2019		\$30,000.00	\$30,000.00	One Heavy-Duty Nat. Gas Vehicle	\$0.00	Yes
ML12055	City of Manhattan Beach	3/1/2013	12/31/2018		\$10,000.00	\$10,000.00	One Medium-Duty Nat. Gas Vehicle	\$0.00	Yes
MS12004	USA Waste of California, Inc.	10/24/2013	11/23/2019		\$175,000.00	\$175,000.00	Construct New Limited-Access CNG Station	\$0.00	Yes
MS12009	Sysco Food Services of Los Angeles	1/7/2014	4/6/2020		\$150,000.00	\$150,000.00	Construct New Public-Access LNG Station	\$0.00	Yes
MS12010	Murrieta Valley Unified School Distric	4/5/2013	9/4/2019		\$242,786.00	\$242,786.00	Construct New Limited-Access CNG Station	\$0.00	Yes
MS12025	Silverado Stages, Inc.	11/2/2012	7/1/2018		\$150,000.00	\$150,000.00	Purchase Six Medium-Heavy Duty Vehicles	\$0.00	Yes
MS12026	U-Haul Company of California	3/14/2013	3/13/2019		\$500,000.00	\$353,048.26	Purchase 23 Medium-Heavy Duty Vehicles	\$146,951.74	Yes
MS12028	Dy-Dee Service of Pasadena, Inc.	12/22/2012	1/21/2019		\$45,000.00	\$40,000.00	Purchase 2 Medium-Duty and 1 Medium-He	\$5,000.00	Yes
MS12029	Community Action Partnership of Or	11/2/2012	11/1/2018		\$25,000.00	\$14,850.00	Purchase 1 Medium-Heavy Duty Vehicle	\$10,150.00	Yes
MS12032	Fox Transportation	12/14/2012	12/13/2018		\$500,000.00	\$500,000.00	Purchase 20 Medium-Heavy Duty Vehicles	\$0.00	Yes
MS12035	Disneyland Resort	1/4/2013	7/3/2019		\$25,000.00	\$18,900.00	Purchase 1 Medium-Heavy Duty Vehicle	\$6,100.00	Yes
MS12036	Jim & Doug Carter's Automotive/VS	1/4/2013	11/3/2018		\$50,000.00	\$50,000.00	Purchase 2 Medium-Heavy Duty Vehicles	\$0.00	Yes
MS12058	Krisda Inc	4/24/2013	1/23/2019		\$25,000.00	\$25,000.00	Repower One Heavy-Duty Off-Road Vehicle	\$0.00	Yes
MS12063	Custom Alloy Light Metals, Inc.	8/16/2013	2/15/2020		\$100,000.00	\$100,000.00	Install New Limited Access CNG Station	\$0.00	Yes
MS12071	Transit Systems Unlimited, Inc.	5/17/2013	12/16/2018		\$21,250.00	\$21,250.00	Expansion of Existing CNG Station	\$0.00	Yes
MS12072	99 Cents Only Stores	4/5/2013	9/4/2019		\$100,000.00	\$100,000.00	Construct New CNG Station	\$0.00	Yes
MS12073	FirstCNG, LLC	7/27/2013	12/26/2019		\$150,000.00	\$150,000.00	Construct New CNG Station	\$0.00	Yes
MS12074	Arcadia Unified School District	7/5/2013	9/4/2019		\$175,000.00	\$175,000.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
MS12082	City of Los Angeles, Bureau of Sanit	11/20/2013	2/19/2021		\$175,000.00	\$175,000.00	Install New CNG Infrastructure	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2012	2-2014 Contracts								
Open Cont	racts								
ML14012	City of Santa Ana	2/13/2015	10/12/2021		\$244,000.00	\$0.00	EV Charging and 7 H.D. LPG Vehicles	\$244,000.00	No
ML14014	City of Torrance	9/5/2014	12/4/2019		\$56,000.00	\$0.00	EV Charging Infrastructure	\$56,000.00	No
ML14016	City of Anaheim	4/3/2015	9/2/2021		\$380,000.00	\$0.00	Purchase 2 H.D. Vehicles, Expansion of Exi	\$380,000.00	No
ML14018	City of Los Angeles, Department of	3/6/2015	9/5/2021		\$810,000.00	\$0.00	Purchase 27 H.D. Nat. Gas Vehicles	\$810,000.00	No
ML14019	City of Corona Public Works	12/5/2014	6/4/2020	6/4/2022	\$178,263.00	\$0.00	EV Charging, Bicycle Racks, Bicycle Locker	\$178,263.00	No
ML14021	Riverside County Regional Park and	7/24/2014	12/23/2016		\$250,000.00	\$0.00	Bicycle Trail Improvements	\$250,000.00	No
ML14022	County of Los Angeles Department o	10/2/2015	5/1/2022		\$300,000.00	\$0.00	Purchase 10 H.D. Nat. Gas Vehicles	\$300,000.00	No
ML14023	County of Los Angeles Department o	10/2/2015	9/1/2017		\$230,000.00	\$0.00	Maintenance Fac. Modifications-Westcheste	\$230,000.00	No
ML14024	County of Los Angeles Department o	10/2/2015	9/1/2017		\$230,000.00	\$0.00	Maintenance Fac. Modifications-Baldwin Par	\$230,000.00	No
ML14025	County of Los Angeles Dept of Publi	10/2/2015	7/1/2018		\$300,000.00	\$0.00	Construct New CNG Station in Malibu	\$300,000.00	No
ML14026	County of Los Angeles Dept of Publi	10/2/2015	5/1/2023		\$300,000.00	\$0.00	Construct New CNG Station in Castaic	\$300,000.00	No
ML14027	County of Los Angeles Dept of Publi	10/2/2015	5/1/2023		\$500,000.00	\$0.00	Construct New CNG Station in Downey	\$500,000.00	No
ML14028	City of Fullerton	9/5/2014	1/4/2022		\$126,950.00	\$0.00	Expansion of Exisiting CNG Infrastructure	\$126,950.00	No
ML14029	City of Irvine	7/11/2014	6/10/2017		\$90,500.00	\$0.00	Bicycle Trail Improvements	\$90,500.00	No
ML14030	County of Los Angeles Internal Servi	1/9/2015	3/8/2018		\$425,000.00	\$0.00	Bicycle Racks, Outreach & Education	\$425,000.00	No
ML14031	Riverside County Waste Manageme	6/13/2014	12/12/2020		\$90,000.00	\$0.00	Purchase 3 H.D. CNG Vehicles	\$90,000.00	No
ML14033	City of Irvine	7/11/2014	2/10/2021		\$60,000.00	\$0.00	Purchase 2 H.D. CNG Vehicles	\$60,000.00	No
ML14034	City of Lake Elsinore	9/5/2014	5/4/2021		\$56,700.00	\$0.00	EV Charging Stations	\$56,700.00	No
ML14049	City of Moreno Valley	7/11/2014	3/10/2021		\$105,000.00	\$30,000.00	One HD Nat Gas Vehicle, EV Charging, Bicy	\$75,000.00	No
ML14050	City of Yucaipa	7/11/2014	9/10/2015	7/1/2016	\$84,795.00	\$0.00	Installation of Bicycle Lanes	\$84,795.00	No
ML14051	City of Brea	9/5/2014	1/4/2017		\$450,000.00	\$0.00	Installation of Bicycle Trail	\$450,000.00	No
ML14054	City of Torrance	11/14/2014	4/13/2017		\$350,000.00	\$0.00	Upgrade Maintenance Facility	\$350,000.00	No
ML14055	City of Highland	10/10/2014	3/9/2018		\$500,000.00	\$0.00	Bicycle Lanes and Outreach	\$500,000.00	No
ML14056	City of Redlands	9/5/2014	5/4/2016	5/4/2017	\$125,000.00	\$0.00	Bicycle Lanes	\$125,000.00	No
ML14062	City of San Fernando	3/27/2015	5/26/2021		\$387,091.00	\$0.00	Expand Existing CNG Fueling Station	\$387,091.00	No
ML14064	City of Claremont	7/11/2014	7/10/2020	1/10/2021	\$60,000.00	\$0.00	Purchase Two Heavy-Duty Nat. Gas Vehicle	\$60,000.00	No
ML14066	City of South Pasadena	9/12/2014	7/11/2016		\$142,096.00	\$0.00	Bicycle Trail Improvements	\$142,096.00	No
ML14067	City of Duarte Transit	12/4/2015	1/3/2023		\$60,000.00	\$0.00	Purchase Two Heavy-Duty Nat. Gas Vehicle	\$60,000.00	No
ML14068	City of South Pasadena	9/12/2014	10/11/2015	7/11/2016	\$10,183.00	\$0.00	Electric Vehicle Charging Infrastructure	\$10,183.00	No
ML14071	City of Manhattan Beach	1/9/2015	11/8/2018		\$22,485.00	\$0.00	Electric Vehicle Charging Infrastructure	\$22,485.00	No
ML14072	City of Cathedral City	8/13/2014	1/12/2021		\$136,000.00	\$0.00	Medium & H.D. Vehicles, EV Charging, Bike	\$136,000.00	No
ML14093	County of Los Angeles Dept of Publi	8/14/2015	1/13/2019		\$150,000.00	\$0.00	San Gabriel BikeTrail Underpass Improveme	\$150,000.00	No
MS14001	Los Angeles County MTA	3/6/2015	4/30/2015		\$1,216,637.00	\$0.00	Clean Fuel Transit Service to Dodger Stadiu	\$1,216,637.00	No
MS14039	Waste Management Collection and	7/10/2015	4/9/2016		\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - Irvine	\$75,000.00	No

			Original	Amended	Contract			Award	Billing
Cont.#	Contractor	Start Date	End Date	End Date	Value	Remitted	Project Description	Balance	Complete?
MS14040	Waste Management Collection and	7/10/2015	4/9/2016		\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - Santa An	\$75,000.00	No
MS14041	USA Waste of California, Inc.	9/4/2015	10/3/2021		\$175,000.00	\$0.00	Limited-Access CNG Station, Vehicle Maint.	\$175,000.00	No
MS14042	Grand Central Recycling & Transfer	6/6/2014	9/5/2021		\$150,000.00	\$0.00	Expansion of Existing CNG Station	\$150,000.00	No
MS14046	Ontario CNG Station Inc.	5/15/2014	5/14/2020	5/14/2021	\$150,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$150,000.00	No
MS14053	Upland Unified School District	1/9/2015	7/8/2021		\$175,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$175,000.00	No
MS14057	Los Angeles County MTA	11/7/2014	10/6/2019		\$1,250,000.00	\$0.00	Implement Various Signal Synchronization P	\$1,250,000.00	No
MS14058	Orange County Transportation Autho	11/7/2014	4/6/2016	10/6/2016	\$1,250,000.00	\$0.00	Implement Various Signal Synchronization P	\$1,250,000.00	No
MS14059	Riverside County Transportation Co	9/5/2014	3/4/2018		\$1,250,000.00	\$0.00	Implement Various Signal Synchronization P	\$1,250,000.00	No
MS14072	San Bernardino Associated Governm	3/27/2015	3/26/2018		\$1,250,000.00	\$0.00	Implement Various Signal Synchronization P	\$1,250,000.00	No
MS14073	Anaheim Transportation Network	1/9/2015	4/30/2017		\$221,312.00	\$179,039.78	Anaheim Resort Circulator Service	\$42,272.22	No
MS14074	Midway City Sanitary District	1/9/2015	3/8/2021		\$250,000.00	\$225,000.00	Limited-Access CNG Station & Facility Modif	\$25,000.00	No
MS14076	Rialto Unified School District	6/17/2015	2/16/2022		\$225,000.00	\$0.00	New Public Access CNG Station	\$225,000.00	No
MS14077	County Sanitation Districts of L.A. Co	3/6/2015	5/5/2021		\$175,000.00	\$0.00	New Limited Access CNG Station	\$175,000.00	No
MS14078	American Honda Motor Co., Inc.	9/4/2015	8/3/2022		\$150,000.00	\$0.00	New Public Access CNG Station	\$150,000.00	No
MS14080	CR&R Incorporated	6/1/2015	8/31/2021		\$249,954.00	\$0.00	Expansion of Existing CNG Infrastructure/Ma	\$249,954.00	No
MS14081	CR&R Incorporated	6/1/2015	5/30/2021		\$175,000.00	\$0.00	Expansion of Existing CNG Infrastructure/Ma	\$175,000.00	No
MS14082	Grand Central Recycling & Transfer	12/4/2015	3/3/2023		\$150,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$150,000.00	No
MS14083	Hacienda La Puente Unified School	7/10/2015	3/9/2022		\$175,000.00	\$0.00	New Limited Access CNG Station	\$175,000.00	No
MS14084	US Air Conditioning Distributors	5/7/2015	9/6/2021		\$100,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$100,000.00	No
MS14087	Orange County Transportation Autho	8/14/2015	4/30/2016		\$239,645.00	\$0.00	Implement Special Metrolink Service to Ang	\$239,645.00	No
MS14090	City of Monterey Park	5/7/2015	5/6/2021		\$225,000.00	\$186,857.60	Expansion of Existing CNG Infrastructure	\$38,142.40	No
MS16030	The Better World Group	12/19/2015	12/31/2017		\$118,065.00	\$0.00	Programmic Outreach Services to the MSR	\$118,065.00	No
Total: 56									
Pending Ex	ecution Contracts								
ML14013	City of Los Angeles, Bureau of Sanit				\$400,000.00	\$0.00	Purchase 128 H.D. Nat. Gas Vehicles	\$400,000.00	No
ML14060	County of Los Angeles Internal Servi				\$104,400.00	\$0.00	Electric Vehicle Charging Infrastructure	\$104,400.00	No
ML14061	City of La Habra				\$60,000.00	\$0.00	Purchase Two Heavy-Duty Nat. Gas Vehicle	\$60,000.00	No
ML14069	City of Beaumont				\$200,000.00	\$0.00	Construct New CNG Infrastructure	\$200,000.00	No
ML14070	City of Rancho Cucamonga				\$365,245.00	\$0.00	Bicycle Trail Improvements	\$365,245.00	No
MS14035	Penske Truck Leasing Co., L.P.				\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - Sun Valle	\$75,000.00	No
MS14036	Penske Truck Leasing Co., L.P.				\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - La Mirad	\$75,000.00	No
MS14037	Penske Truck Leasing Co., L.P.				\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - Carson	\$75,000.00	No
MS14038	Penske Truck Leasing Co., L.P.				\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - Fontana	\$75,000.00	No
MS14075	Fullerton Joint Union High School Di				\$300,000.00	\$0.00	Expansion of Existing CNG Infrastructure/Ma	\$300,000.00	No
MS14079	Waste Resources, Inc.				\$100,000.00	\$0.00	New Limited Access CNG Station	\$100,000.00	No
MS14085	Prologis, L.P.				\$100,000.00	\$0.00	New Limited Access CNG Station	\$100,000.00	No
MS14086	San Gabriel Valley Towing I				\$150,000.00	\$0.00	New Public Access CNG Station	\$150,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS14092	West Covina Unified School District				\$124,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$124,000.00	No
Total: 14			I			l			1
Declined/C	ancelled Contracts								
ML14063	City of Hawthorne				\$32,000.00	\$0.00	Expansion of Existng CNG Infrastructure	\$32,000.00	No
MS14043	City of Anaheim				\$175,000.00	\$0.00	Expansion of Existing CNG Station	\$175,000.00	No
MS14091	Serv-Wel Disposal				\$100,000.00	\$0.00	New Limited-Access CNG Infrastructure	\$100,000.00	No
Total: 3						1	-		
Closed Cor	ntracts								
ML14010	City of Cathedral City	8/13/2014	10/12/2015		\$25,000.00	\$25,000.00	Street Sweeping Operations	\$0.00	Yes
ML14011	City of Palm Springs	6/13/2014	1/12/2016		\$79,000.00	\$78,627.00	Bicycle Racks, Bicycle Outreach & Educatio	\$373.00	Yes
ML14015	Coachella Valley Association of Gov	6/6/2014	9/5/2015		\$250,000.00	\$250,000.00	Street Sweeping Operations	\$0.00	Yes
ML14020	County of Los Angeles Dept of Publi	8/13/2014	1/12/2018		\$150,000.00	\$0.00	San Gabriel BikeTrail Underpass Improveme	\$150,000.00	No
ML14065	City of Orange	9/5/2014	8/4/2015		\$10,000.00	\$10,000.00	Electric Vehicle Charging Infrastructure	\$0.00	Yes
MS14002	Orange County Transportation Autho	9/6/2013	4/30/2014		\$576,833.00	\$576,833.00	Clean Fuel Transit Service to Orange Count	\$0.00	Yes
MS14003	Orange County Transportation Autho	8/1/2013	4/30/2014	10/30/2014	\$194,235.00	\$184,523.00	Implement Metrolink Service to Angel Stadiu	\$9,712.00	Yes
MS14004	Orange County Transportation Autho	9/24/2013	4/30/2014		\$36,800.00	\$35,485.23	Implement Express Bus Service to Solar De	\$1,314.77	Yes
MS14005	Transit Systems Unlimited, Inc.	4/11/2014	2/28/2016		\$515,200.00	\$511,520.00	Provide Expanded Shuttle Service to Hollyw	\$3,680.00	Yes
MS14007	Orange County Transportation Autho	6/6/2014	4/30/2015		\$208,520.00	\$189,622.94	Implement Special Metrolink Service to Ang	\$18,897.06	Yes
MS14008	Orange County Transportation Autho	8/13/2014	5/31/2015		\$601,187.00	\$601,187.00	Implement Clean Fuel Bus Service to Orang	\$0.00	Yes
MS14009	A-Z Bus Sales, Inc.	1/17/2014	12/31/2014	3/31/2015	\$388,000.00	\$388,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS14047	Southern California Regional Rail Au	3/7/2014	9/30/2014		\$49,203.00	\$32,067.04	Special Metrolink Service to Autoclub Speed	\$17,135.96	Yes
MS14048	BusWest	3/14/2014	12/31/2014	5/31/2015	\$940,850.00	\$847,850.00	Alternative Fuel School Bus Incentive Progra	\$93,000.00	Yes
MS14088	Southern California Regional Rail Au	5/7/2015	9/30/2015		\$79,660.00	\$66,351.44	Special Metrolink Service to Autoclub Speed	\$13,308.56	Yes
Total: 15									÷
Open/Com	plete Contracts								
ML14032	City of Rancho Cucamonga	1/9/2015	1/8/2022		\$113,990.00	\$104,350.63	Expansion of Existing CNG Infras., Bicycle L	\$9,639.37	Yes
MS14044	TIMCO CNG Fund I, LLC	5/2/2014	11/1/2020		\$150,000.00	\$150,000.00	New Public-Access CNG Station in Santa A	\$0.00	Yes
MS14045	TIMCO CNG Fund I, LLC	6/6/2014	12/5/2020		\$150,000.00	\$150,000.00	New Public-Access CNG Station in Inglewoo	\$0.00	Yes

\$78,000.00

\$78,000.00

Expansion of an Existing CNG Fueling Statio

\$0.00

Yes

10/12/2020

6/13/2014

MS14052 Total: 4 Arcadia Unified School District

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2014	4-2016 Contracts								
Open Cont	racts								
ML16007	City of Culver City Transportation De	10/6/2015	4/5/2023		\$246,000.00	\$0.00	Purchase 7 H.D. Nat. Gas Vehicles, EV Cha	\$246,000.00	No
ML16009	City of Fountain Valley	10/6/2015	2/5/2018		\$46,100.00	\$0.00	Install EV Charging Infrastructure	\$46,100.00	No
ML16011	City of Claremont	10/6/2015	6/5/2022		\$90,000.00	\$0.00	Purchase 3 Heavy-Duty Nat. Gas Vehicles	\$90,000.00	No
ML16012	City of Carson	1/15/2016	10/14/2022		\$60,000.00	\$0.00	Purchase 2 Heavy-Duty Nat. Gas Vehicles	\$60,000.00	No
ML16013	City of Monterey Park	12/4/2015	7/3/2022		\$90,000.00	\$0.00	Purchase 3 Heavy-Duty Nat. Gas Vehicles	\$90,000.00	No
ML16023	City of Banning	12/11/2015	12/10/2021		\$30,000.00	\$0.00	Purchase 1 H.D. Nat. Gas Vehicle	\$30,000.00	No
ML16027	City of Whittier	1/8/2016	11/7/2022		\$30,000.00	\$0.00	Purchase 1 H.D. Nat. Gas Vehicle	\$30,000.00	No
ML16031	City of Cathedral City	12/19/2015	2/18/2017		\$25,000.00	\$0.00	Street Sweeping in Coachella Valley	\$25,000.00	No
MS14089	Top Shelf Consulting, LLC	2/5/2015	8/4/2016		\$200,000.00	\$190,000.00	Enhanced Fleet Modernization Program	\$10,000.00	No
MS16002	Orange County Transportation Autho	10/6/2015	5/31/2016		\$722,266.00	\$0.00	Clean Fuel Transit Service to Orange Count	\$722,266.00	No
MS16004	Mineral LLC	9/4/2015	7/3/2017		\$25,890.00	\$2,700.00	Design, Develop, Host and Maintain MSRC	\$23,190.00	No
Total: 11		1	1			I			1
Pending E	ecution Contracts								
ML16005	City of Palm Springs				\$40,000.00	\$0.00	Install Bicycle Racks, and Implement Bicycl	\$40,000.00	No
ML16006	City of Cathedral City				\$55,000.00	\$0.00	Purchase 1 H.D. Nat. Gas Vehicle, Bicycle	\$55,000.00	No
ML16008	City of Pomona				\$310,000.00	\$0.00	Purchase 4 Medium-Duty and 9 Heavy-Duty	\$310,000.00	No
ML16010	City of Fullerton				\$370,500.00	\$0.00	Expand Existing CNG Station, EV Charging I	\$370,500.00	No
ML16014	City of Dana Point				\$153,818.00	\$0.00	Extend an Existing Class 1 Bikeway	\$153,818.00	No
ML16015	City of Yorba Linda				\$85,000.00	\$0.00	Install Bicycle Lanes	\$85,000.00	No
ML16016	City of Los Angeles, Department of				\$630,000.00	\$0.00	Purchase 21 Heavy-Duty Nat. Gas Vehicles	\$630,000.00	No
ML16017	City of Long Beach				\$1,445,400.00	\$0.00	Purchase 48 Medium-Duty, 16 H.D. Nat. Ga	\$1,445,400.00	No
ML16018	City of Hermosa Beach				\$29,520.00	\$0.00	Purchase 2 M.D. Nat. Gas Vehicles, Bicycle	\$29,520.00	No
ML16019	City of Los Angeles, Dept of General				\$102,955.00	\$0.00	Install EV Charging Infrastructure	\$102,955.00	No
ML16020	City of Pomona				\$440,000.00	\$0.00	Install Road Surface Bicycle Detection Syste	\$440,000.00	No
ML16021	City of Santa Clarita				\$49,400.00	\$0.00	Install EV Charging Infrastructure	\$49,400.00	No
ML16022	Los Department of Water and Power				\$390,000.00	\$0.00	Purchase 13 H.D. Nat. Gas Vehicles	\$390,000.00	No
ML16024	City of Azusa				\$30,000.00	\$0.00	Purchase 1 H.D. Nat. Gas Vehicle	\$30,000.00	No
ML16025	City of South Pasadena				\$210,535.00	\$0.00	Purchase 2 H.D. Nat. Gas Vehicles, Expand	\$210,535.00	No
ML16026	City of Downey				\$40,000.00	\$0.00	Install EV Charging Infrastructure	\$40,000.00	No
ML16028	City of Azusa				\$25,000.00	\$0.00	Enhance Existing Class 1 Bikeway	\$25,000.00	No
ML16032	City of Azusa				\$474,925.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$474,925.00	No
ML16033	Coachella Valley Association of Gov				\$250,000.00	\$0.00	Street Sweeping Operations in Coachella Va	\$250,000.00	No
ML16034	City of Riverside				\$500,000.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$500,000.00	No
ML16035	City of Wildomar				\$500,000.00	\$0.00	Install Bicycle Lanes	\$500,000.00	No

			Original	Amended	Contract			Award	Billing
Cont.#	Contractor	Start Date	End Date	End Date	Value	Remitted	Project Description	Balance	Complete?
ML16036	City of Brea				\$500,000.00	\$0.00	Install a Class 1 Bikeway	\$500,000.00	No
ML16037	City of Rancho Cucamonga				\$30,000.00	\$0.00	Purchase One Heavy-Duty Natural Gas Vehi	\$30,000.00	No
ML16038	City of Palm Springs				\$230,000.00	\$0.00	Install Bicycle Lanes	\$230,000.00	No
ML16039	City of Torrance Transit Department				\$32,000.00	\$0.00	Install EV Charging Infrastructure	\$32,000.00	No
ML16040	City of Eastvale				\$110,000.00	\$0.00	Install EV Charging Infrastructure	\$110,000.00	No
ML16041	City of Moreno Valley				\$20,000.00	\$0.00	Install EV Charging Infrastructure	\$20,000.00	No
ML16042	City of San Dimas				\$55,000.00	\$0.00	Install EV Charging Infrastructure	\$55,000.00	No
ML16045	City of Anaheim				\$275,000.00	\$0.00	Maintenance Facility Modifications	\$275,000.00	No
ML16046	City of El Monte				\$33,000.00	\$0.00	Install EV Charging Infrastructure	\$33,000.00	No
ML16047	City of Fontana				\$500,000.00	\$0.00	Enhance an Existing Class 1 Bikeway	\$500,000.00	No
ML16048	City of Placentia				\$90,000.00	\$0.00	Install a Bicycle Locker and EV Charging Infr	\$90,000.00	No
ML16049	City of Buena Park				\$429,262.00	\$0.00	Installation of a Class 1 Bikeway	\$429,262.00	No
ML16050	City of Westminster				\$115,000.00	\$0.00	Installation of EV Charging Infrastructure	\$115,000.00	No
ML16051	City of South Pasadena				\$320,000.00	\$0.00	Implement "Open Streets" Event with Variou	\$320,000.00	No
ML16052	City of Rancho Cucamonga				\$315,576.00	\$0.00	Install Two Class 1 Bikeways	\$315,576.00	No
ML16053	City of Claremont				\$498,750.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$498,750.00	No
ML16054	City of Yucaipa				\$120,000.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$120,000.00	No
ML16055	City of Ontario				\$270,000.00	\$0.00	Purchas Nine Heavy-Duty Natural-Gas Vehi	\$270,000.00	No
ML16056	City of Ontario				\$150,000.00	\$0.00	Expansion of an Existing CNG Station	\$150,000.00	No
ML16057	City of Yucaipa				\$380,000.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$380,000.00	No
ML16058	Los Angeles County Department of P				\$491,898.00	\$0.00	Purchase 15 H.D. Nat. Gas Vehicles and Ins	\$491,898.00	No
ML16059	City of Burbank				\$180,000.00	\$0.00	Purchase 6 H.D. Nat. Gas Vehicles	\$180,000.00	No
ML16060	City of Cudahy				\$73,910.00	\$0.00	Implement an "Open Streets" Event	\$73,910.00	No
ML16061	City of Murrieta				\$11,642.00	\$0.00	Installation of EV Charging Infrastructure	\$11,642.00	No
ML16062	City of Colton, Electric Department				\$25,000.00	\$0.00	Installation of EV Charging Infrastructure	\$25,000.00	No
ML16063	City of Glendora				\$30,000.00	\$0.00	Purchase One H.D. Nat. Gas Vehicle	\$30,000.00	No
ML16064	County of Orange, OC Parks				\$204,073.00	\$0.00	Implement "Open Streets" Events with Vario	\$204,073.00	No
ML16065	City of Temple City				\$500,000.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$500,000.00	No
ML16066	City of Long Beach				\$75,050.00	\$0.00	Implement an "Open Streets" Event	\$75,050.00	No
ML16067	City of South El Monte				\$73,329.00	\$0.00	Implement an "Open Streets" Event	\$73,329.00	No
ML16068	Riverside County Dept of Public Heal				\$171,648.00	\$0.00	Implement an "Open Streets" Events with V	\$171,648.00	No
ML16069	City of West Covina				\$54,199.00	\$0.00	Installation of EV Charging Infrastructure	\$54,199.00	No
ML16070	City of Beverly Hills				\$90,000.00	\$0.00	Purchase 3 H.D. Nat. Gas Vehicles	\$90,000.00	No
ML16071	City of Highland				\$264,500.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$264,500.00	No
ML16072	City of Palm Desert				\$56,000.00	\$0.00	Installation of EV Charging Infrastructure	\$56,000.00	No
ML16073	City of Long Beach				\$50,000.00	\$0.00	Implement an "Open Streets" Event	\$50,000.00	No
ML16074	City of La Verne				\$365,000.00	\$0.00	Install CNG Fueling Station	\$365,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML16075	City of San Fernando				\$354,000.00	\$0.00	Install a Class 1 Bikeway	\$354,000.00	No
ML16076	City of San Fernando				\$100,000.00	\$0.00	Install EV Charging Infrastructure	\$100,000.00	No
ML16077	City of Rialto				\$463,216.00	\$0.00	Pedestrian Access Improvements, Bicycle L	\$463,216.00	No
ML16078	City of Moreno Valley				\$32,800.00	\$0.00	Install Bicycle Infrastructure & Implement Bi	\$32,800.00	No
ML16079	City of Yucaipa				\$5,000.00	\$0.00	Purchase Electric Lawnmower	\$5,000.00	No
ML16083	City of El Monte				\$57,210.00	\$0.00	Install EV Charging Infrastructure	\$57,210.00	No
MS16001	Los Angeles County MTA				\$1,350,000.00	\$0.00	Clean Fuel Transit Service to Dodger Stadiu	\$1,350,000.00	No
MS16029	Orange County Transportation Autho				\$943,643.00	\$0.00	Transportation Control Measure Partnership	\$943,643.00	No
MS16043	LBA Realty Company LLC				\$100,000.00	\$0.00	Install Limited-Access CNG Station	\$100,000.00	No
MS16080	Riverside Country Transportation Co				\$1,200,000.00	\$0.00	Passenger Rail Service for Coachella and St	\$1,200,000.00	No
MS16081	EDCO Disposal Corporation				\$150,000.00	\$0.00	Expansion of Existing Public Access CNG St	\$150,000.00	No
MS16082	Riverside County Transportation Co				\$590,759.00	\$0.00	Extended Freeway Service Patrols	\$590,759.00	No
MS16084	Transit Systems Unlimited, Inc.				\$565,600.00	\$0.00	Implement Special Shuttle Service from Uni	\$565,600.00	No
MS16085	Southern California Regional Rail Au				\$78,033.00	\$0.00	Special MetroLink Service to Autoclub Spee	\$78,033.00	No
MS16086	San Bernardino Associated Governm				\$800,625.00	\$0.00	Freeway Service Patrols	\$800,625.00	No
Total: 73									·
Closed Con	tracts								

010300 00	1111010							
MS16003	Special Olympics World Games Los	10/9/2015	12/30/2015	\$380,304.00	\$380,304.00	Low-Emission Transportation Service for Sp	\$0.00	Yes
Totals 1								

1 Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 36

REPORT: California Air Resources Board Monthly Meeting

SYNOPSIS: The California Air Resources Board met on February 18, 2016, in Sacramento. The following is a summary of this meeting.

RECOMMENDED ACTION: Receive and File.

Judith Mitchell, Member SCAQMD Governing Board

sm

The Air Resources Board's (ARB or Board) February meeting was held on February 18, 2016 in Sacramento at the California Environmental Protection Agency Headquarters Building. Key items presented are summarized below.

Introduction of new Board Members

AB 1288 requires two additional members representing disadvantaged communities to be appointed to the state Air Resources Board. These members will be appointed by the Senate Committee on Rules and the Speaker of the Assembly.

Diane Takvorian, executive director and co-founder of the Environmental Health Coalition was appointed by Assembly Speaker Toni G. Atkins, and former Senator Dean Florez was appointed by Senate President pro Tempore Kevin de León, Chair of the Senate Rules Committee. Both new Board members were in attendance at the February Board meeting.

Discussion Items

1. Public Meeting to Hear an Update on the Aliso Canyon Methane Leak

The Board heard an informational update on the Aliso Canyon methane leak. The leak was declared permanently sealed on February 18, 2016, by the Division of Oil, Gas & Geothermal Resources. ARB has been working closely with the South Coast Air Quality Management District efforts to measure pollutants levels in the surrounding communities due to the leak. Those measurements are publically available on both agencies' websites. The Board also heard from staff a summary of the efforts to develop a program to mitigate the global warming consequences of the Aliso Canyon methane leak. The Governor's January 6, 2016 Aliso Canyon Emergency Proclamation directs ARB to produce a mitigation program by March 31, 2016. A draft of the program will be posted the week of March 7, 2016 for public comment.

SCAQMD Staff Comments/Testimony: Executive Officer Barry Wallerstein testified on the agenda item concerning the Aliso Canyon methane leak. Dr. Wallerstein provided copies of the January 21, 2016 letter and Governing Board Resolution dated January 8, 2016, requesting the Air Resources Board to develop a program to mitigate the greenhouse gas effects of the Southern California Gas methane leak affecting the Porter Ranch community and requesting that such funds be dedicated, to the maximum extent feasible, to mitigation projects for the benefit of Porter Ranch, the Southern California community directly impacted by air emissions due to the gas leak; and, if projects are not feasible in Porter Ranch, the funds be dedicated to projects in Southern California. He also noted best science regarding the global warming potential of methane gas should be used relative to determining the funding amount for full mitigation of the gas released from the leak at Well SS-25. In addition, he noted that local air quality co-benefits should receive high priority in mitigation project selection.

2. Report from the Office of the Ombudsman 2015

The Board heard a report on the Office of the Ombudsman's engagement with small business and other stakeholders in 2015. This interaction ensures that perspectives from all concerned stakeholders are integrated into ARB's policies, regulatory processes, and procedures. Ombudsman Bowen described the Small Business Opportunities Advisory Panel that represents a cross-section of regulated industries. Two of the three Panel co-chairs, Mr. Alan Abbs, Executive Director of the California Air Pollution Control Officers Association and Mr. Richard McCaskill, President and CEO of a small recycling business in San Diego discussed their experience with the Panel. The presentation also described objectives in 2016 to further foster collaboration between businesses, air districts, and ARB.

3. Public Hearing to Consider Amendments to the Portable Fuel Container Regulation

The Board approved amendments to the portable fuel container (PFC) regulation. The regulation reduces volatile organic compound emissions from PFC evaporation, spillage and permeation. The amendments include requiring certification fuel to reflect commercially available gasoline containing 10 percent ethanol; harmonizing aspects of the Board's PFC certification and test procedures with those of the United States Environmental Protection Agency, and strengthening ARB's certification process to reduce the noncompliance rate identified through testing of PFCs taken from store shelves.

4. Public Meeting to Hear an Update on the Status of the Advanced Clean Transit Rule

The Board heard an update on staff's development of potential amendments to the Advanced Clean Transit Rule. The update summarized what was learned from the advanced transit technology symposium held on February 8 and the efforts of the advanced clean transit workgroup, which includes transit agency representatives, to investigate technology performance and availability and costs. The goal of the effort is to identify a feasible long-term strategy toward zero emission bus fleets. The Board discussed the need to ensure transit service levels are maintained, and incorporated those considerations in the program development process.

Attachment

CARB February 18, 2016 Meeting Agenda

California Environmental Protection Agency

PUBLIC MEETING AGENDA

February 18, 2016

Webcast

LOCATION:

California Environmental Protection Agency Air Resources Board Byron Sher Auditorium, 2nd Floor 1001 I Street Sacramento, California 95812

This facility is accessible by public transit. For transit information, call (916) 321-BUSS, website: <u>http://www.sacrt.com</u> (This facility is accessible to persons with disabilities.)

TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO: <u>http://www.arb.ca.gov/lispub/comm/bclist.php</u>

Thursday <u>February 18, 2016</u> 9:00 a.m.

DISCUSSION ITEMS:

Note: These agenda items may be heard in a different order at the Board meeting.

Agenda Item

16-2-1: Public Meeting to Hear an Update on the Aliso Canyon Methane Leak

The Board will hear an informational update on the Aliso Canyon methane leak and staff's preparation of a climate impacts mitigation program pursuant to the Governor's January 6, 2016, Proclamation concerning the incident.

More Information Staff Presentation

16-2-2: Report from the Office of the Ombudsman 2015

The Board will hear a report on the Office of the Ombudsman's engagement with small business and other stakeholders during 2015.

More Information Staff Presentation

16-2-3: Public Hearing to Consider Amendments to the Portable Fuel Container Regulation

The Board will consider amendments to the portable fuel container (PFC) regulation, which include requiring certification fuel to contain 10 percent ethanol, harmonizing aspects of the Board's PFC certification and test procedures with those of the United States Environmental Protection Agency, revising the Air Resources Board's (ARB) certification process, and streamlining, clarifying, and increasing the robustness of ARB's certification and test procedures.

More Information

Staff Presentation

16-2-5: Public Meeting to Hear an Update on the Status of the Advanced Clean Transit Rule

The Board will hear an update on staff's development of proposed amendments to the Advanced Clean Transit Rule. This update will include information on establishing a transit workgroup and a summary of outcomes from staff's advanced transit technology symposium.

More Information Staff Presentation

CLOSED SESSION

The Board will hold a closed session, as authorized by Government Code section 11126(e), to confer with, and receive advice from, its legal counsel regarding the following pending or potential litigation, and as authorized by Government Code section 11126(a):

POET, LLC, et al. v. California Air Resources Board, et al., Superior Court of California (Fresno County), Case No. 15CECG03380.

American Fuels and Petrochemical Manufacturers, et al. v. Jane O'Keeffe, et al., U.S. District Court (D. Ore. Portland), Case No. 3:15-CV-00467; Plaintiffs' appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 15-35834.

POET, LLC, et al. v. Corey, et al., Superior Court of California (Fresno County), Case No. 09CECG04850; plaintiffs' appeal, California Court of Appeal, Fifth District, Case No. F064045; California Supreme Court, Case No. S213394. [remanded to trial court].

Rocky Mountain Farmers Union, et al. v. Corey, U.S. District Court (E.D. Cal. Fresno), Case No. 1:09–CV–02234–LJO–DLB; ARB interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 09-CV-02234 [remanded to trial court].

American Fuels and Petrochemical Manufacturers, et al. v. Corey, et al., U.S. District Court (E.D. Cal. Fresno), Case No. 1:10-CV-00163-AWI-GSA; ARB's interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 10-CV-00163 [remanded to trial court].

California Chamber of Commerce et al. v. California Air Resources Board, Sacramento Superior Court, Case No. 34-2012-80001313; plaintiffs' appeal, California Court of Appeal, Third District, Case No. C075930.

Morning Star Packing Company, et al. v. California Air Resources Board, et al., Sacramento Superior Court, Case No. 34-2013-800001464; plaintiffs' appeal, California Court of Appeal, Third District, Case No. C075954.

Kimberly-Clark Worldwide, Inc. v. California Air Resources Board, et al., Sacramento County Superior Court, Case No. 34-2015-80002246.

Richard Sowinski v. California Air Resources Board, et al., Orange County Superior Court, Case No. 30-2015-00822179-CU-BT-CXCCX-105.

State of West Virginia et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1363.

California Dump Truck Owners Association v. Nichols, U.S. District Court (E.D. Cal. Sacramento), Case No. 2:11-CV-00384-MCE-GGH; plaintiffs' appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 13-15175.

Truck and Engine Manufacturers Association v. California Air Resources Board, Sacramento Superior Court, Case No. 34-2013-00150733.

Alliance of Automobile Manufacturers v. California Air Resources Board; Sacramento Superior Court, Case No. 34-2013-00152974.

Owner Operator Independent Drivers Association, Inc., United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 14-1192.

Alliance for California Business v. Nichols et al., Glenn County Superior Court, Case No. 13CV01232.

Dalton Trucking, Inc. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 13-1283.

Owner-Operator Independent Drivers Association Inc. et al. v. Richard W. Corey et al., U.S. District Court, (E.D. Cal. Fresno) Case No. 1:13-CV-01998-LJO-SAB (transferred by court to E.D.Cal. Sacramento, Case No. 2:14-CV-00186-MCE-AC).

Jack Cody dba Cody Transport v. California Air Resources Board, et al. (Sacramento Superior Court, Case No. 34-2015-80002116.

John R. Lawson Rock & Oil, Inc. et al. v. California Air Resources Board et al., Fresno County Superior Court, Case No. 14-CECG01494.

Transportation Solutions Defense and Education Fund v. California Air Resources Board, Fresno County Superior Court, Case No. 14CECG01788 (plaintiff's transfer to Sacramento Superior).

People v. Southern California Gas Company, Los Angeles Superior Court, Case No. BC 602973.

California Air Resources Board v. BP West Coast Products LLC, Contra Costa County Superior Court, Case No. C12-00567.

California Air Resources Board v. West Coast Diesel, Inc., Fresno County Superior Court, Case No. 15 CECG 03337.

OPPORTUNITY FOR MEMBERS OF THE BOARD TO COMMENT ON MATTERS OF INTEREST

Board members may identify matters they would like to have noticed for consideration at future meetings and comment on topics of interest; no formal action on these topics will be taken without further notice.

OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD

Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but that do not specifically appear on the agenda. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.

TO ELECTRONICALLY SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:

http://www.arb.ca.gov/lispub/comm/bclist.php

(Note: not all agenda items are available for electronic submittals of written comments.)

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT THE CLERK OF THE BOARD: 1001 I Street, 23rd Floor, Sacramento, California 95814 (916) 322-5594 ARB Homepage: <u>www.arb.ca.gov</u>

SPECIAL ACCOMMODATION REQUEST

Consistent with California Government Code Section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than 7 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia
- Documentos disponibles en un formato alterno u otro idioma
- Una acomodación razonable relacionados con una incapacidad

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envié un fax a (916) 322-3928 lo más pronto posible, pero no menos de 7 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

SMOKING IS NOT PERMITTED AT MEETINGS OF THE CALIFORNIA AIR RESOURCES BOARD



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 37

- PROPOSAL: SCAQMD Comments on CARB Plans to Mitigate Methane Emissions Resulting from Aliso Canyon Gas Leak
- SYNOPSIS: Staff has prepared a comment letter, consistent with the December 2015 Board Resolution, requesting that funds be dedicated to benefit Porter Ranch that includes recommendations to CARB regarding projects to mitigate the methane emissions from the Aliso Canyon Gas Leak. This action is to approve the comment letter and direct staff to send the letter to CARB.
- COMMITTEE: Stationary Source, February 19, 2016, Recommended for Approval

RECOMMENDED ACTION:

Approve submittal of comments to CARB on the development of the Aliso Canyon Climate Mitigation Program (Attachment).

Barry R. Wallerstein, D.Env. Executive Officer

PF:JW:AK

Background

The natural gas leak at Aliso Canyon was first detected on October 23, 2015 and lasted for 118 days before the well was capped on February 18, 2016. The South Coast AQMD (SCAQMD) received 2,340 odor complaints and since October 24, 2015 has sent inspectors to perform ongoing site inspections, complaint investigations, and surveillances at the Aliso Canyon site, in Porter Ranch, and other downwind residential areas. In response to this event, the SCAQMD established an extensive local monitoring network that included mobile methane measurements in the surrounding communities, fixed monitoring sites, air analysis from individual complaint locations, and measurements at the leaking well. On November 5, 2015, the SCAQMD issued SoCal Gas with a Notice to Comply to safely and expeditiously stop the release of natural gas from the affected well site. This was then followed with SCAQMD served SoCal Gas a Notice of Violation for creating a public nuisance on November 23, 2015. On January 23, 2016, the SCAQMD Hearing Board issued a comprehensive abatement order that, in part, required SoCal Gas to take immediate action in reducing odors and air pollution from the leaking well. The SCAQMD has been and continues to work closely with other agencies and the public to present information in response to the concerns of thousands of residents.

The Aliso Canyon Gas Leak created significant health concerns for nearby residents, increased stress, and disrupted the lives of thousands of residents, affected the education of thousands of children, and created economic impacts to home values and nearby businesses. Although the well has been sealed, the longer term community impacts will need further investigation and monitoring.

Currently it is estimated that the Aliso Canyon leak released over 190 million pounds of methane. Methane is a potent greenhouse gas that also increases background ozone levels. The release of this methane will remain in the atmosphere for over a decade with implications for both the climate and air quality.

SoCal Gas Co. has stated their intent to mitigate the release of the GHG emissions associated with the Aliso Canyon leak. As directed under the Governor's January 6, 2016 emergency proclamation, the California Air Resources Board (CARB) is tasked to develop an action plan for this mitigation effort. CARB presented the background and rapid development schedule for the Aliso Canyon Climate Mitigation Program at their Board meeting on February 18, 2016 (Attached). CARB is currently seeking comments on the proposed development of the plan prior to the release of formal draft plan during the week of March 7, 2016, with intent of finalizing the plan by March 31, 2016.

The CARB presentation shows the climate mitigation programs to offset the Aliso Canyon GHG emissions will occur within California, but does not prioritize projects within the impacted Porter Ranch Community or the South Coast Air Basin. At the January 8, 2016 SCAQMD Governing Board meeting, the Board approved Resolution No. 16-1, requesting that funds obtained for GHG mitigation of the Aliso Canyon emissions first occur within the Porter Ranch Community, to the extent feasible, and then within the Basin (Attached to Comment Letter).

CARB has yet to determine how the required amount of GHG emission mitigation will be calculated. Currently, California uses a 100 year global warming potential (GWP) factor within their climate programs. However, current science has shown the warming impact of methane as being more substantial, and using a 20 year GWP is more representative of the warming impacts. The difference between using a 20 year vs a 100 GWP to estimate the climate impacts of methane is over a factor of three. Within the Draft Short-Lived Climate Pollutant Reduction Strategy, CARB has started using the 20 year GWP for methane, therefore, SCAQMD staff recommends a 20 year GWP or other lower time-period value representing the best science.

Additionally, the mitigation programs that will be implemented to offset the Aliso Canyon GHG emissions should have significant criteria and toxic pollutant co-benefits to the degree possible. The initial indication from CARB is that the Aliso Canyon mitigation projects will be focused on reducing short lived climate forcers. These compounds are currently defined by California climate programs to include methane, black carbon, and fluorinated gases. Additionally, the slow reaction of methane in the atmosphere increases background levels of ozone, making it more difficult for the Basin to achieve the federal ozone standards. Tropospheric ozone itself is a greenhouse gas and the International Panel on Climate Change (IPCC) considers ozone criteria pollutant precursors (NOx and VOCs) to be short lived climate forcers. The State, in final development of their short lived climate pollutant strategy and, in this mitigation plan, should recognize ozone as a climate forcer to further maximize the climate and health benefits of emission reduction programs.

Proposal

This action is to approve the submission of the attached comment letter and conduct outreach to garner local support from local public entities on focusing the Aliso Canyon Climate Mitigation Program in the communities surrounding Aliso Canyon to the extent feasible, and within the South Coast Air Basin.

Attachments

- 1. SCAQMD Comment Letter with Attachments
- 2. CARB Board Presentation

DRAFT

March 4, 2016

The Honorable Mary D. Nichols, Chair California Air Resources Board 1001 "I" Street PO Box 2815 Sacramento CA 95812

RE: Development of the Aliso Canyon Climate Impacts Mitigation Program

Dear Chair Nichols,

The Aliso Canyon Gas leak has been an environmental disaster for the local community. It has significantly impacted the health of nearby residents, created stress and disruption in the lives of thousands, affected the education of thousands of children, and impacted nearby local businesses. The SCAQMD received 2,340 odor complaints from nearby residents during this event, and established an extensive monitoring program in the impacted areas. While the well was capped on February 12th, the longer term community impacts from this event will need further investigation, along with the global environmental impacts. The resulting release of an estimated 190 million pounds of methane will persist in the atmosphere for well over a decade with implications for both climate and air quality.

SoCal Gas Co has stated their intent to mitigate the release of these GHG emissions, and as directed under the Governor's January 6, 2016 emergency proclamation, the California Air Resources Board (CARB) is tasked to develop a draft action plan for this mitigation effort. CARB staff presented the background and accelerated development schedule for the Aliso Canyon Climate Mitigation Program at your Board Meeting on February 18, 2016. The draft plan is scheduled to be released during the week of March 7, 2016, with a final plan being released by March 31, 2016. Our Board is concerned that the mitigation funds and projects are not currently required to be focused on the affected communities nor within the South Coast Air Basin (Basin).

At the SCAQMD's January 8, 2016 Governing Board meeting, Supervisor Michael D. Antonovich introduced a motion to adopt the attached resolution, which was approved by all Board members present (Attachment-A). As stated in the Resolution, the Governing Board of the South Coast Air Quality Management District requests that funds for the greenhouse-gas (GHG) mitigation program be dedicated, to the maximum extent feasible, to mitigation projects for the benefit of Porter Ranch, which is the Southern California community directly impacted by the air emissions due to the gas leak, and if projects are not feasible in Porter Ranch, to be dedicated to projects in Southern California. This Resolution and corresponding letter were sent to you on January 21, 2016 (Attachment A).

This mitigation program could and should have significant co-benefits for toxic and criteria pollutant reductions, especially if targeted at reducing short lived climate forcing pollutants. As you know, the population of the Basin accounts for nearly half of the state's population despite occupying only 7% of the state's land area. The Basin accounts for over a quarter of the State's directly emitted greenhouse gases reported by facilities. These emissions, combined with the Basin's over 17 million vehicles, two of the largest ports in the world, and significant waste streams result in the Basin having GHG emissions likely to amount to 30-40% of all GHG emissions in the state. The activities that lead to GHG emissions also result in the Basin having localized toxic impacts and non-attainment of federal standards for ozone and fine particulate matter.

Attached is a list of example GHG mitigation projects that potentially could be implemented (Attachment B). These examples are just some of the possibilities that exist and an RFP process would identify the best GHG mitigation projects along with co-benefits for the local Porter Ranch community and the Basin. Choosing GHG programs through an RFP process will be the best way to select worthy projects of this type. For example, projects could include measures that provide support for locally impacted businesses, decrease pollutant exposure for schoolchildren, and implement new technologies. These projects will help develop a more resilient energy infrastructure, potentially reducing the need for natural gas storage facilities, along with reducing emissions of criteria and toxic emissions while providing economic benefits.

Lastly, methane is a powerful greenhouse gas that persists in the atmosphere for approximately 12 years before reacting to produce ozone. The last three IPCC reports have increasingly highlighted the importance of methane as a heat trapping gas in the atmosphere (Attachment C). When determining the GHG mitigation needs, California should include the latest science on methane that shows the importance of using a 20 year global warming potential (GWP). Using the more appropriate 20 year GWP, the preliminary GHG mitigation need is 7.8 million MT CO₂eq compared to 2.4 million MT CO₂eq using the 100 year GWP. Additionally, the slow reaction of methane in the atmosphere increases background levels of ozone, making it more difficult for the Basin to achieve the federal ozone standards. Tropospheric ozone itself is a greenhouse gas and the IPCC considers ozone criteria pollutant precursors (NOx and VOCs) to be short lived climate forcers (Attachment C). The State, in final development of their short lived climate pollutant strategy and in this mitigation plan should recognize ozone as a climate forcer to further maximize the climate and health benefits of emission reduction programs.

Thank you for your attention to the importance of prioritizing the Aliso Canyon Climate Mitigation Program within the Porter Ranch community and the Basin.

Sincerely,

Dr. William A. Burke Chairman, SCAQMD

Enclosures:

- Attachment A: SCAQMD Board Resolution No. 16-1 and Letter to Mary Nichols
- Attachment B: Examples of Select GHG Mitigation Projects
- Attachment C: Methane Global Warming Potentials and Short Lived Climate Forcers

Attachment A: SCAQMD Board Resolution No. 16-1 and Letter to Mary Nichols



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178 (909) 396-2000 • www.agmd.gov

Members of the Governing Board:

Chairman Dr. William A. Burke Speaker of the Assembly Appointee

Vice Chairman Ben Benoit Mayor, Wildomar Cities of Riverside County

Michael D. Antonovich Supervisor, Fifth District County of Los Angeles

John J. Benoit Supervisor, Fourth District County of Riverside

Joe Buscaino Councilmember, 15th District City of Los Angeles Representative

Michael A. Cacciotti Councilmember, South Pasadena Cities of Los Angeles County/ Eastern Region

Joseph K. Lyou, Ph.D. Governor's Appointee

Larry McCallon Mayor, Highland Cities of San Bernardino County

Judith Mitchell Councilmember, Rolling Hills Estates Cities of Los Angeles County/ Western Region

Shawn Nelson Supervisor, Fourth District County of Orange

Dr. Clark E. Parker, Sr. Senate Rules Committee Appointee

Dwight Robinson Councilmember, Lake Forest Cities of Orange County

Janice Rutherford Supervisor, Second District County of San Bernardino The Honorable Mary D. Nichols, Chair California Air Resources Board 1001 "I" Street P.O. Box 2815 Sacramento, CA 95812

Re: Governor's Executive Order of January 6, 2016, directing the Air Resources Board to Develop a Program to Mitigate the Greenhouse Gas Effects of the Southern California Gas Methane Leak Affecting the Porter Ranch Community

Dear Chair Nichols:

The Governing Board of the South Coast Air Quality Management District is very concerned about the impacts of the Aliso Canyon Southern California Gas Company methane leak on the residents of Porter Ranch. The District has been working closely with the state agencies that are helping to address this problem. We appreciate that the Governor has declared a State of Emergency regarding this situation and has directed the Air Resources Board to develop a program, funded by Southern California Gas Company, to fully mitigate the greenhouse gas effects of the methane leak by March 31, 2016.

At our January 8 Governing Board meeting, Board Member Supervisor Michael D. Antonovich introduced a motion to adopt the enclosed resolution, which was approved by all board members present. As stated in the Resolution, the Governing Board of the South Coast Air Quality Management District hereby requests that funds for the greenhouse-gas mitigation program be dedicated, to the maximum extent feasible, to mitigation projects for the benefit of Porter Ranch, which is the Southern California community directly impacted by the air emissions due to the gas leak, and if projects are not feasible in Porter Ranch, to be dedicated to projects in Southern California.

January 21, 2016

Attachment A continued: SCAQMD Board Resolution No. 16-1 and Letter to Mary Nichols

Thank you for your attention to this Resolution, which is also being transmitted to Governor Brown.

Sincerely,

ABune W

Dr. William A. Burke, Ed.D. Chairman, SCAQMD Governing Board

Enc: Resolution #16-1

cc: The Honorable Edmund G. Brown, Jr., Governor

Attachment A Continued: SCAQMD Board Resolution No. 16-1 and Letter to Mary Nichols

RESOLUTION NO. 16-1

A resolution of the Governing Board of the South Coast Air Quality Management District to urge that Governor Edmund G. Brown, Jr. request that funds obtained from the Southern California Gas Company for a greenhouse-gas program to mitigate methane emissions be spent on measures to benefit the Porter Ranch community adversely impacted by those emissions, and the Southern California region to the extent that it is infeasible to conduct projects in Porter Ranch.

WHEREAS on October 23, 2015, a natural gas leak was discovered at a well within the Aliso Canyon Natural Gas Storage Facility in Los Angeles County near Porter Ranch, and Southern California Gas Company's attempts to stop the leak have failed; and

WHEREAS major amounts of methane, a powerful greenhouse gas, have been emitted into the atmosphere; and

WHEREAS on January 6, 2016, Governor Brown issued a proclamation that declared the situation an emergency and directed various State agencies to take further action to protect public health and safety. ensure accountability and strengthen oversight of gas storage facilities; and

WHEREAS, the South Coast Air Quality Management District has been working closely with the agencies identified in the Governor's proclamation to ensure a consistent approach to protecting public health and safety and the environment; and

WHEREAS, the South Coast Air Quality Management District is seeking an Order for Abatement from its Hearing Board to, among other things, impose enhanced monitoring requirements on the Southern California Gas Company at the Aliso Canyon Natural Gas Storage Facility, require that the Southern California Gas Company fund a health study to determine the long term health effects, if any, imposed on the Porter Ranch community due to the exposure to methane and other air emissions; and

WHEREAS, the Governor's proclamation directs the California Air Resources Board, in consultation with other state agencies, to develop a program to fully mitigate the greenhouse-gas effects of the leak's emissions of methane by March 31, 2016, and provides that the mitigation program be funded by the Southern California Gas Company and be limited to projects in California;

NOW, THEREFORE, BE IT RESOLVED that the Governing Board of the South Coast Air Quality Management District does hereby approve this resolution, which is to be submitted to Governor Brown, requesting that funds obtained from the Southern California Gas Company for the greenhouse-gas mitigation program be dedicated, to the maximum extent feasible, to mitigation projects for the benefit of Porter Ranch, the Southern California community directly impacted by the air emissions due to the gas leak, and if projects are not feasible in Porter Ranch, to be dedicated to projects in Southern California.

> Antonovich, B. Benoit, J. Benoit, Burke, Cacciotti, Lyou, Mitchell, Nelson, Parker, Pulido, and Yates.

NOES: None. **ABSENT:** Buscaino.

8-2016

AYES:

aundra McDaniel, Clerk of the Board

Mitigation Program	GHGs reduced	Criteria and Toxic Pollutants Reduced
Schools Renewable Generation, Solar Thermal, and Workplace Charging (Porter Ranch/Basinwide)	CO2, Methane, Black Carbon, Tropospheric Ozone (precursors)	NOx, Particulates
Electric School Bus Replacements (Porter Ranch/Basinwide)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, Particulates, Diesel Exhaust
Biogas Production from Waste Diversion, Landfills, and Other Waste Facilities (Basin)	CO2, Methane, Black Carbon, N2O, Tropospheric Ozone (precursors)	NH3, VOCs, Particulates, Diesel Exhaust
Commercial Building Energy Efficiency, Renewable Energy, and Solar Thermal (Porter Ranch/Basinwide)	CO2, Methane, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust
Residential Weatherization, Improved Appliance Efficiency, Renewable Energy, and Solar Thermal (Porter Ranch/Basinwide)	CO2, Methane, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust
Zero-Emission Urban Bus Replacements (Porter Ranch/Basinwide)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, Particulates, Diesel Exhaust
Enhanced Fleet Modernization Program (EFMP) Plus Up for (Disadvantaged Communities around Porter Ranch)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust
Residential/Commercial Electric and Solar Thermal Space/Water Heating (Porter Ranch/Basinwide)	CO2, Methane, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates
Residential/Commercial Electric Landscape Equipment (Porter Ranch/Basinwide)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust
Offroad Industrial/Commercial Equipment (Porter Ranch/ Basinwide)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust

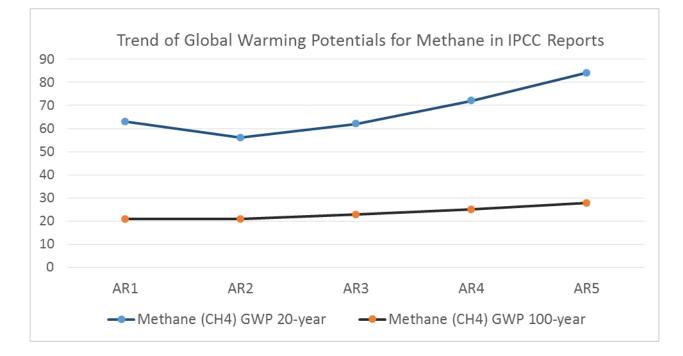
Attachment B: Examples of Select GHG Mitigation Projects

Class 6 Truck Alternative Fuel/Hybrid Powertrains (Porter Ranch/Basinwide)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust
Electric Storage/Smart Grid (Porter Ranch/Basinwide)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust
Fireplace/Woodstove Retrofits (Porter Ranch/Basinwide)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates
Offroad Tier 4 Construction Equipment (Basin)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust
Tier 4 Emission Standard Non-Road Portable Engines (Porter Ranch/Basinwide)	CO2, Black Carbon, Tropospheric Ozone (precursors)	NOx, VOCs, Particulates, Diesel Exhaust

Attachment B Continued: Examples of Select GHG Mitigation Projects

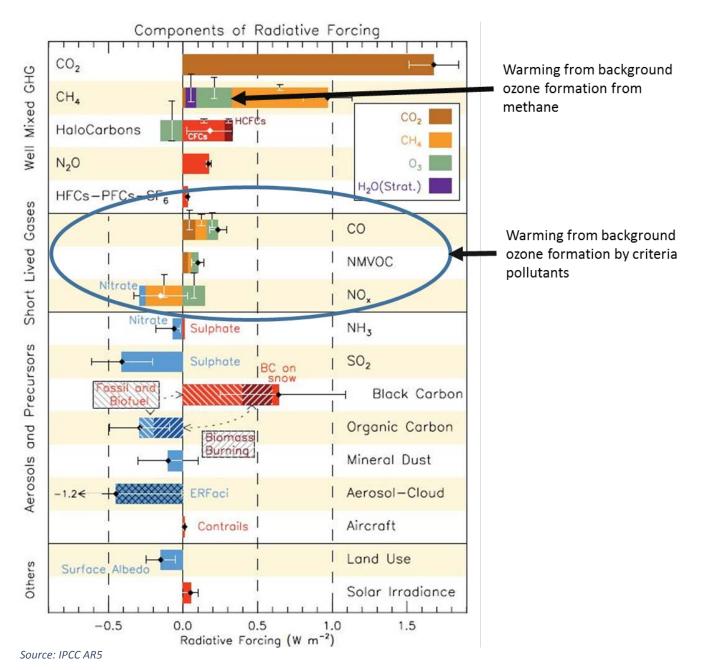
Attachment C: Methane Global Warming Potentials and Short Lived Climate Forcers

Each subsequent IPCC report has increased the importance of methane as a climate forcer and adjusted the methane global warming potentials (GWP). Additionally, the global warming potential of 20 years should be used for methane since its atmospheric lifetime is only 12 years. Accounting for warming from a gas 88 years past it destruction in the atmosphere does not account for the strong near-term climate impacts. The GWPs for methane include an indirect component from the warming resulting from the production of background ozone.



Attachment C (continued): Methane Global Warming Potentials and Short Lived Climate Forcers

The increase in background ozone levels from both increased methane and criteria pollutants results in tropospheric ozone being one of the strongest climate forcers as shown below.





ALISO CANYON: CLIMATE IMPACTS MITIGATION PROGRAM

Background

- Letter from SoCalGas to Governor (Dec. 18, 2015) SoCalGas commits to:
 - "[M]itigate the environmental impact of the actual natural gas released from the leak"
 - -"[W]ork[] with you and your staff to develop a framework that will help us achieve this goal"
- Governor's Aliso Canyon Proclamation (Jan. 6, 2016):
 - Directs ARB to produce a climate impacts mitigation program
 - Program to be funded by SoCalGas

The Mitigation Program

- The Proclamation directs ARB to develop a program to "fully mitigate the leak's emissions of methane"
 - -In consultation with other State agencies
 - -Mitigation projects must be in California
 - Prioritize projects that reduce short-lived climate pollutants
 - Develop program by March 31, 2016

Full Mitigation

- Program must define and achieve "full mitigation"
- Minimum: CO₂e emission reductions commensurate with leak emissions
- Cap-and-Trade compliance instruments not eligible
- ARB seeks stakeholder input on topics relevant to "full mitigation," including:
 - Global warming potential
 - -Timeframes
 - -Discounting
 - Other approaches toward "full mitigation"

Key Principles

- For the program: full mitigation, achieved in an equitable and transparent manner
- Eligible projects would comport with several core principles, e.g.:
 - Focus on short-lived climate pollutants
 - Substantial nexus with climate impacts
 - Complementary
 - Additional
- Other relevant factors under consideration:
 - Co-benefits
 - Transformational qualities
 - Benefits to affected and economically disadvantaged communities

Project Categories

- Current focus: creating a process for identifying and implementing viable mitigation opportunities
- E.g., opportunities identified in ARB's Draft Short-Lived Climate Pollutant Reduction Strategy*:
 - Biomethane infrastructure (dairy manure, etc.)
 - Organic waste diversion from landfills
 - Anaerobic digestion at wastewater treatment plants
 - Incentive programs

Program Implementation

- Implementation approach being considered:
 - Portfolio of project categories coupled with financial "backstop"
 - Oversight by third-party administrator
 - ARB would provide direction re: project selection and certify progress and compliance
- Ongoing judicial proceedings may offer avenues for implementation
 - People v. Southern California Gas Company

Key Upcoming Dates

- Beginning today, comments can be posted and viewed on ARB's website*
- Draft to be posted on ARB's Aliso Canyon web page during week of <u>March 7, 2016</u>**
- Second comment period through <u>March 21, 2016</u>
- Final program description to be posted on ARB's Aliso Canyon web page by <u>March 31, 2016</u>

** at <u>http://www.arb.ca.gov/research/aliso_canyon_natural_gas_leak.htm</u>

^{*} at <u>http://www.arb.ca.gov/lispub/comm/bclist.php</u>



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 38

- PROPOSAL: Approve Proposed Guidelines for Disbursement and Tracking of Funds Received Pursuant to Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption
- SYNOPSIS: Proposed guidelines have been developed for the use of funds received pursuant to Rule 1304.1 – Electrical Generating Facility Fee for use of Offset Exemption, with targets for projects within close proximity of the Electrical Generating Facilities and in Environmental Justice areas that support regional air quality goals. This action is to obtain approval of the proposed guidelines for disbursement and tracking of funds received pursuant to Rule 1304.1.
- COMMITTEE: Stationary Source, Reviewed, January 22 and February 19, 2016

RECOMMENDED ACTION:

Approve the proposed guidelines for disbursement and tracking of funds received pursuant to Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption.

Barry R. Wallerstein, D.Env. Executive Officer

PF:JW:TG:DO:HP

Background

The Board adopted Rule 1304.1 – Electrical Generating Facility Fee (EGF) for Use of Offset Exemption in September 2013. The rule allows the option to use offsets, at fee rates set in the rule, from the SCAQMD internal offset accounts for repowering Steam Utility Boilers in the South Coast Air Basin (SoCAB). The Once-Through-Cooling (OTC) mandates approved by the State Water Resources Control Board¹ are likely to result in a significant increase in the need for offsets and corresponding debits from the SCAQMD internal offset accounts. Offsets in the SCAQMD internal offset accounts are valuable public goods and the purpose of Rule 1304.1 is to recoup the fair market value for the use of such offsets when qualifying sources exercise the existing offset exemption in Rule 1304(a)(2). Rule 1304.1(d)(1) requires that:

- 1. "Except as set forth in Paragraph (d)(2), the Offset Fee proceeds paid pursuant to this Rule shall be deposited in an SCAQMD restricted fund account...";
- 2. "...shall be used to obtain emissions reductions consistent with the needs of the Air Quality Management Plan"; and
- 3. "Priority shall be given to funding air quality improvement projects in impacted surrounding communities where the repowering EGF projects are located."

The Board, as part of the adopting Resolution, directed staff to work closely with stakeholders including the California Public Utilities Commission (CPUC), the California Independent System Operators (CAISO), California Energy Commission (CEC), California Air Resources Board (CARB), and other interested stakeholders on guidelines outlining how any future fee revenues generated from Rule 1304.1 could be utilized to obtain emission reductions consistent with the needs of the AQMP.

Following the Board's direction:

• A designated restricted fund (Fund 66) has been established to track the deposit of fees paid and the withdrawal of funds for approved projects. The first deposit to Fund 66 was in August 2015 in the amount of approximately \$242,215 paid by the Los Angeles Department of Water and Power for an increase in generation capacity of 8.9 MW at their Scattergood facility. It should be noted that any interest accrued in the fund will also be invested in projects/programs.

¹ On May 4, 2010, the State Water Resources Control Board (SWRCB) approved a once-through-cooling (OTC) policy that included many grid reliability recommendations made by the California Independent System Operator (ISO), as well as a joint implementation proposal developed by the California Energy Commission (CEC), California Public Utilities Commission (CPUC), and California ISO. The Office of Administrative Law approved the policy on September 27, 2010, and it became effective on October 1, 2010. The regulation affected 19 California power plants totaling about 17,500 MW; [currently potentially 9 power plants in the SoCAB are impacted totaling 5,741 MW – see Attachments 2 and 3]

- New work program codes have been developed to track staff time spent on development and implementation of Rule 1304.1. This is needed because the rule allows up to 8% of Offset Fee proceeds be used to cover administrative costs related to the implementation of this rule.
- Staff is proposing guidelines for rule implementation, including outreach activities for RFP release advertisement, and procedures for proposal evaluation and awarding of contracts in selecting qualifying projects.

Proposed Guidelines

The proposed guidelines can be found in attachment 1 and are based on the following information:

Staff is proposing that the following criteria be established for the use of Rule 1304.1 funds, which are generally consistent with the criteria for the use of funds received from the Competitive Power Ventures (CPV) Sentinel project via AB1318. All projects and programs will be brought to the Board for final approval and funding.

Based on direction provided by the Stationary Source Committee (SSC), staff recommends the following funding distribution for Rule 1304.1 implementation, with Board discretion to make future adjustments:

- A goal of 50% of the net funds to be used within a ten (10) mile radius of the repowered EGF; and
- A goal of 50% of the net funds to be used in environmental justice areas within a fifteen (15) mile radius of the repowered EGF

The proposed definition for close proximity to the repowering project is defined as a 10 mile radius. The proposed definition of environmental justice (EJ) area is consistent with the latest Carl Moyer definition for South Coast Air Basin (SoCAB) and the AB 1318 definition for the Coachella Valley, and includes poverty and air quality criteria that must both be met and is defined, as follows:

Poverty Criteria

An area where at least 10 percent of the population falls below the Federal Poverty Level, based on the most recently published American Community Survey data, AND

Air Quality Criteria

- SoCAB
 - (A) the highest 15th percentile of PM2.5 concentration measurements interpolated to a two (2) kilometer grid of the most recently

published final Multiple Air Toxics Emissions Study (MATES) modeling domain; OR

- (B) the highest 15th percentile of cancer risk as calculated in the most recently published final MATES.
- Coachella Valley (CV)

The highest 15th percentile of PM10 concentration in CV^2 .

Projects selected will typically be implemented through a Request for Proposal (RFP) process, when a recommended minimum of \$1,000,000 is available per RFP. RFPs may be issued annually or as funds become available based on the schedule of the various repowering projects. Projects may qualify under either proximity or EJ or both based on location. The Board will have the discretion to fund projects consistent with the target criteria, although not necessarily at the exact percentage goals.

Specific RFP criteria may need to be tailored to a single repowering project or multiple projects based on timing, project location(s), and funding availability. Proposals will be evaluated based on criteria established by the Board through the release of the RFP, and staff recommendations forwarded to the Board for consideration. Selection criteria may include, but may not be limited to: expertise of the project proponent, assistance in attaining regional air quality goals, local job creation, effective use of funds, secondary or co-benefits, and community/local government support.

Should there be a lack of qualifying projects in close proximity or EJ areas, the Board has the discretion to redirect funding to areas outside of the 10 mile proximity radius or, for EJ area projects, to other EJ areas outside the15 mile radius. Staff recommends that the Board use the funds as geographically close to the repowering project as possible. Should there be an abundance of qualified projects, the Board may prioritize projects based on the funding available for the maximum public benefit, shovel ready projects, and may also identify projects that can proceed as additional funds become available.

Projects that are scalable based on available funding and those that could be held as backup projects for an extended period of time without extensive revisions may also have advantages. Staff is proposing to provide for flexibility in the criteria to address the unique circumstances of each location and tailor approaches that maximize local benefits while addressing regional and long-term needs relative to public health and air quality improvement.

² In addition to the SoCAB, a portion of the Salton Sea air basin (the Coachella Valley area) and the Mojave Desert air basin are within the jurisdiction of the SCAQMD. These areas are currently in attainment for PM2.5, but have not been re-designated as attainment for PM10.

Attachment 2 lists the nine existing EGFs that could potentially repower using offsets from the SCAQMD internal accounts pursuant to Rule 1304(a)(2). Attachment 3 shows the SoCAB in more detail and includes the area within a 10 mile radius from the location of the EGFs anticipated to repower. Projects in these areas would qualify under the proximity criteria. Attachment 4 shows graphically the areas covered based on the definition of EJ within the jurisdiction of the SCAQMD. For the SoCAB, the two kilometer grid squares indicate EJ areas based on the Carl Moyer definition using PM2.5. For the portions of the two remaining air basins that are within the SCAQMD jurisdiction, EJ areas are determined based on poverty using census tract and PM10 concentration data. Attachment 5 shows EJ areas bounded by a 15 mile radius around each potential repowered facility. Attachment 6 is an overlay of Attachments 3 and 5 indicating where projects could potentially qualify under both criteria.

Public Process

Staff met a total of five times with a stakeholder working group during this process to establish the parameters and discuss guidance concepts.³ The working group was comprised of the electrical power generation industry, CPUC, CAISO, CEC, U.S.EPA, CARB, local governments, and environmental groups. The draft proposal for implementation guidelines was presented for comment at the fourth working group meeting on September 30, 2015.

Staff also presented suggested concepts for Rule 1304.1 implementation at both the January 22 and February 19, 2016 Stationary Source Committee meetings and at the Environmental Justice Advisory Group meeting on January 29, 2016. Staff held the fifth working group meeting on January 26, 2016 and presented the direction received from the Stationary Source Committee at the January 22, 2016 meeting, and requested additional feedback. The Committee's direction has been incorporated into this proposal, with a change of proximity radius from 6 to 10 miles and a bounding of EJ areas within a 15 mile radius.

Formal comments were submitted by the City of Huntington Beach on October 12, 2015 and February 2, 2016. The letters principally stated that staff's proposal does not follow the guidelines used to implement the Coachella Valley CPV Sentinel project and that the majority of funds should be spent in the city or county in which the repower project is located. Staff met with city representatives and responded that it believes the current proposal, which serves only as a guideline and not a mandate, closely follows the implementation guidance structure used for the CPV Sentinel project. Staff has recommended a goal that 50% of funds be spent within a 10 mile radius of the repower

³ Rule 1304.1 Implementation Working Group Meetings were held on: October 23, 2013; July 10, 2014 and November 20, 2014, prior to the release of the draft proposal at a subsequent meeting on September 30, 2015 and January 26, 2016.

project whereas the CPV Sentinel project implementation guidelines required only 30% be spent within a 6 mile radius with the remaining 70% set aside for projects in EJ and other areas, not necessarily in the same city as the project. A resident of Huntington Beach and City representatives have requested that funding criteria be fashioned such that the funds could be directed to mitigating the impacts of the Rainbow Recycling facility in the Oak View community described as an EJ area. Both are asking for a 6 mile radius bound on the EJ area criteria and use of CalEnviroScreen 2.0 as the basis for determining EJ areas. However, staff is concerned that CalEnviroScreen 2.0, an evolving online tool provided by the California Office of Health Hazard Assessment, is still in early development and does not focus on air quality impacts specifically, which is a requirement of Rule 1304.1 and the purpose of fund expenditures.

A comment letter submitted by the California State University (CSU) Office of the Chancellor requests the radius for the EJ area criteria be set at 18 miles to capture certain CSU campuses. CSU also supports funding project proponents that may be located outside an EJ area, but results in benefits to that area. Staff's proposal allows projects that benefit EJ areas to qualify for EJ funding.

Comments were also received by from the City of Glendale on October 30, 2015 which included a request for funding consideration of an expanded landfill digester power project and projects that include creation of a park, a community solar project where ownership would be offered to residents, and an energy storage project to help with peak energy demand. Staff met with city representatives and stated that all projects with a demonstrated emissions benefit could be considered in the aggregate with other proposals for funding.

Staff believes the proposal as outlined represents a balance of stakeholder interest, air quality improvement potential and EJ considerations.

Outreach

Outreach for the RFPs will follow a similar enhanced approach as used in AB 1318. Efforts will include outreach to local governments, and community and environmental groups, as well as other interested parties for use of funds in close proximity to the repowering projects. Input will also be sought for the use of funds in EJ areas, through expanded noticing, including multi-lingual avenues (e.g., newspapers, newsletters, etc.). Staff will also make itself available to answer questions and assist those needing assistance with developing viable proposals. Additionally, direction will be sought from the Board as projects come forward and are recommended for approval.

In accordance with SCAQMD's Procurement Policy, a public notice advertising the Program Announcement and Application and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's electronic listing of certified minority vendors. Notice of the Program Announcement and Application will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's web site (http://www.aqmd.gov/) where it can be viewed by making the selection "Grants and Bids."

Benefits to SCAQMD

Projects funded through the RFP process will implement the requirements of Rule 1304.1. Emission reductions realized through projects will benefit air quality, achieving emissions reductions needed to attain air quality standards and, thus, improve public health in the SCAQMD's jurisdiction.

Resource Impacts

Rule 1304.1 allows up to 8 percent of submitted funds to be used to cover administrative costs associated with program implementation.

Attachments

- 1. Proposed Guidelines for Disbursement and Tracking of Funds Pursuant to Rule 1304.1-Electrical Generating Facility Fee for Use of Offset Exemption
- 2. Detailed List of 9 Potential Repowering Projects (January 2016)
- 3. Proximity Criteria Potential Repower (Power Plant) Project Locations With 10 Mile Radius Overlay
- 4. EJ Areas in the AQMD Showing 2km EJ Grids in the SoCAB and Highest 15th percentile of PM10 Concentration in the Coachella Valley
- 5. EJ Area Criteria Potential Repower (Power Plant) Project Locations With 15 Mile Radius Overlay
- Composite Overlay 9 Potential Repower (Power Plant) Projects with 10 Mile Radius Proximity Overlay and EJ Area 18 Mile Radius Overlay

Attachment 1

Proposed Guidelines for Disbursement and Tracking of Funds Received Pursuant to Rule 1304.1 – Electrical Generating Facility (EGF) Fees for Use of Offset Exemption

The following guidelines are proposed for the disbursement of funds received pursuant to Rule 1304.1.

Funding Distribution

The distribution of funds received will be based on the following goals:

- 50 percent of net funds to be used within 10 mile proximity to the EGF; and
- 50 percent of net funds to be used within Environmental Justice (EJ) areas located within 15 miles to the EGF.

Projects can be eligible under either criteria or both.

EJ Areas Definition

EJ area is defined consistent with the Carl Moyer and AB1318, as follows:

• Poverty Criteria

An area where at least 10% of the population falls below the Federal poverty level based on the most recently published American Community Survey (ACS) data AND

- Air Quality Criteria
 - SoCAB (Carl Moyer)
 - The highest 15th percentile of PM2.5 OR
 - The highest 15th percentile of cancer risk from MATES
 - Coachella Valley (AB1318)
 - The highest 15th percentile of PM10 concentration

Implementation

Requests for Proposals (RFP) will be issued once a minimum of \$1 million is received. RFPs will be issued annually or as sufficient funds are received dependent on the varying repowering project scheduling. Staff will conduct expanded outreach to the public regarding the availability of funding.

Project proposals will be evaluated and scored. Staff will present recommendations to the Governing Board for consideration and approval. If an abundance of qualified projects exist, the Governing Board may prioritize based on available funding. If a lack of qualifying proposals exist, the Governing Board has the discretion to direct funds to other areas either outside 10 miles for proximity or to other EJ areas outside of 15 miles.

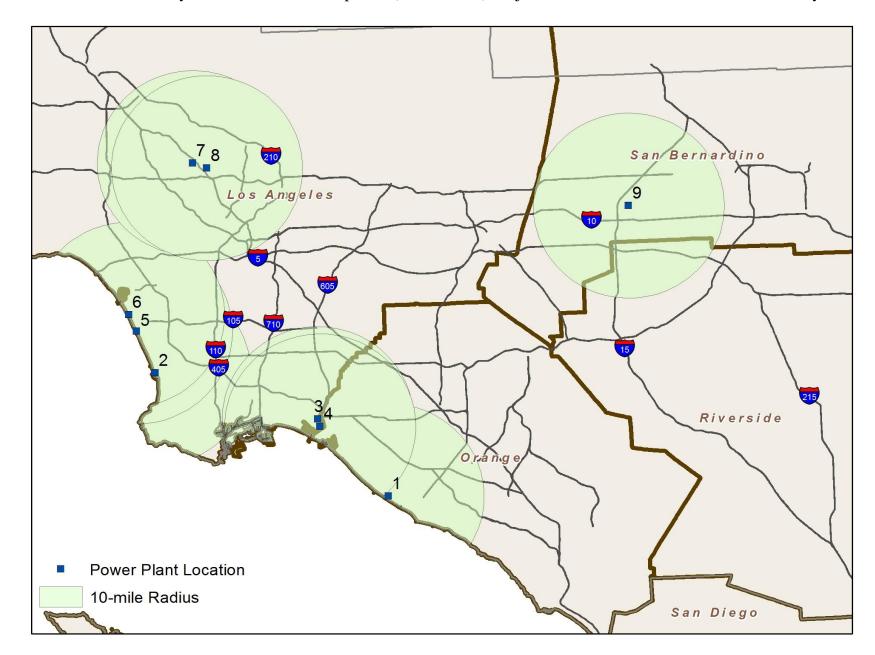
The Governing Board has the final decision on project approval and funding.

Tracking of Funds

A designated restricted fund (Fund 66) has been established to track the deposit of fees paid and the withdrawal of funds for approved projects. New work program codes have been developed to track staff time spent on development and implementation of Rule 1304.1. The rule provides that up to 8 percent of offset fee proceeds may be used to cover administrative costs related to the implementation of the rule. It should be noted that any interest accrued in the fund will also be put towards projects/programs.

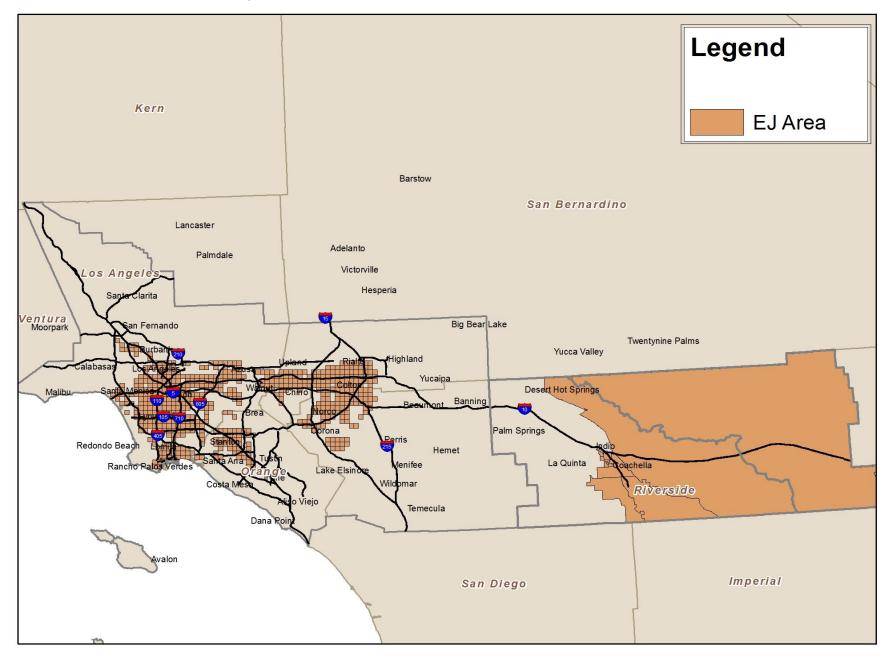
ATTACHMENT 2. Detailed List of 9 Potential Repowering Projects (January 2016)

Fac ID#	Name	Street Number	Street Dir	Street Name	Street Sfx	City	Zip	Proposed MW Repower (As of August 2015)
115389	AES HUNTINGTON BEACH, LLC	21730		NEWLAND	ST	HUNTINGTON BEACH	92646	430
115536	AES REDONDO BEACH, LLC	1100	Ν	HARBOR	DR	REDONDO BEACH	90277	1,310
115394	AES ALAMITOS, LLC	690	N	STUDEBAKER	RD	LONG BEACH	90803	1,950
800074	LA CITY, DWP HAYNES GENERATING STATION	6801		2ND	ST	LONG BEACH	90803	460
115663	EL SEGUNDO POWER, LLC	301		VISTA DEL MAR		EL SEGUNDO	90245	447
800075	LA CITY, DWP SCATTERGOOD GENERATING STN	12700		VISTA DEL MAR		PLAYA DEL REY	90293	297
25638	BURBANK CITY, BURBANK WATER & POWER	164	W	MAGNOLIA	BLVD	BURBANK	91502	99
800327	GLENDALE WATER & POWER (GRAYSON)	800		AIRWAY		GLENDALE	91201	108
115315	NRG GEN ON WEST, LP	8996		ETIWANDA	AVE	ETIWANDA	91739	640
TOTAL ESTIMATED REPOWER MW					5,741			

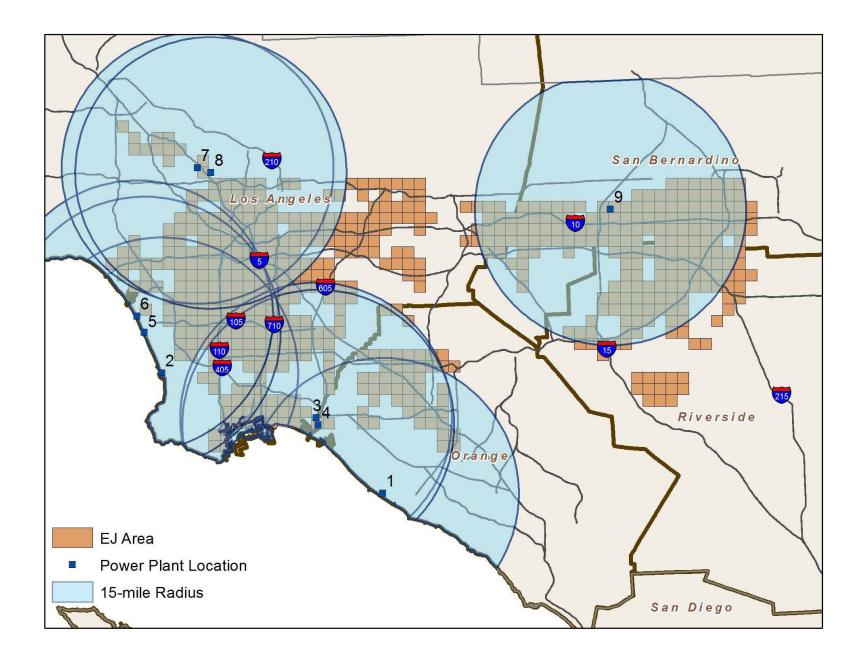


ATTACHMENT 3. Proximity Criteria - Potential Repower (Power Plant) Project Locations with 10 Mile Radius Overlay

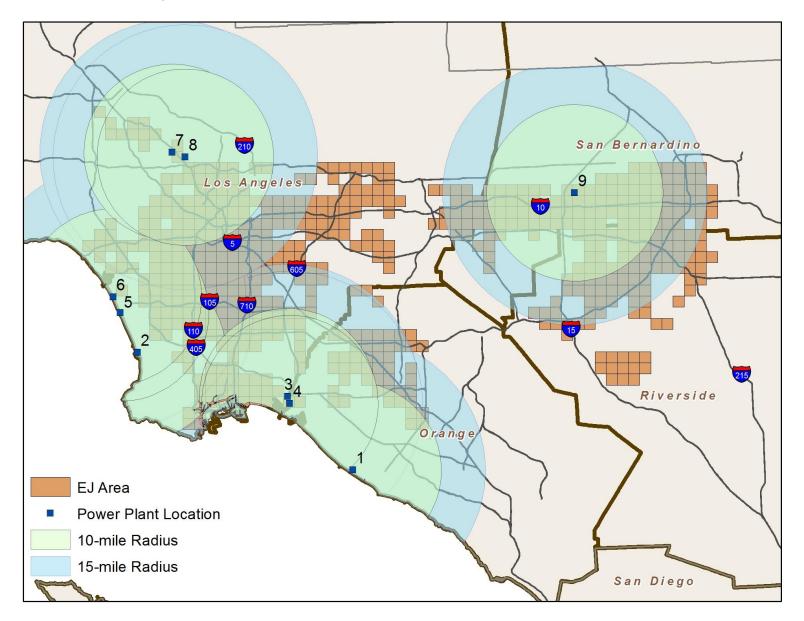
ATTACHMENT 4. EJ Areas in the AQMD Showing 2km EJ Grids in the SoCAB and Highest 15th percentile of PM10 Concentration in the Coachella Valley



ATTACHMENT 5. EJ Area Criteria - Potential Repower (Power Plant) Project Locations with 15 Mile Radius Overlay



ATTACHMENT 6. Composite Overlay – 9 Potential Repower (Power Plant) Projects with 10 Mile Radius Proximity Overlay and EJ Area 15 Mile Radius Overlay



Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 39

REPORT: Annual RECLAIM Audit Report for 2014 Compliance Year

- SYNOPSIS: The annual report on the NOx and SOx RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, availability of RECLAIM Trading Credits (RTCs) and their average annual prices, job impacts, compliance issues, and other measures of performance for the twenty-first year of this program. In addition, recent trends in trading future year RTCs are analyzed and presented in this report. Further, a list of facilities that did not reconcile their emissions for the 2014 Compliance Year is included with the report.
- COMMITTEE: Stationary Source, February 19, 2016, Reviewed

RECOMMENDED ACTION:

Approve the attached annual report.

Barry R. Wallerstein, D.Env. Executive Officer

MN:DL

Background

The Board adopted the RECLAIM program on October 15, 1993 to provide a more flexible compliance program than command-and-control for specific facilities, which represent SCAQMD's largest emitters of NOx and SOx. Although RECLAIM was developed as an alternative to command-and-control, it was designed to meet all state and federal Clean Air Act and other air quality regulations and program requirements, as well as a variety of performance criteria in order to ensure public health protection, air quality improvement, effective enforcement, and the same or lower implementation costs and job impacts. RECLAIM is what is commonly referred to as a "cap and trade" program. Facilities subject to the program were initially allocated declining annual balances of RECLAIM Trading Credits (RTCs, denominated in pounds of emissions in a specified year) based upon their historical production levels and upon emissions factors established in the RECLAIM regulation. RECLAIM facilities are required to reconcile their emissions with their RTC holdings on a quarterly basis (*i.e.*, hold RTCs equal to or greater than their emissions). These facilities have the flexibility to manage how they meet their emission goals by installing emission controls, making process changes or trading RTCs amongst themselves. RECLAIM achieves its overall emission reduction goals provided aggregate RECLAIM emissions are no more than aggregate allocations.

RECLAIM Rule 2015 - Backstop Provisions requires SCAQMD staff to conduct annual program audits to assess various aspects of the program and to verify that program objectives are met. SCAQMD staff has completed audits of facility records and completed the annual audit of the RECLAIM program for Compliance Year 2014 (which encompasses the time period for Cycle 1 from January 1, 2014 to December 31, 2014 and for Cycle 2 from July 1, 2014 to June 30, 2015). Based on audited emissions in this report and previous annual reports, SCAQMD staff has determined that RECLAIM met its emissions goals for Compliance Year 2014, as well as for all previous compliance years with the only exception of NOx emissions in Compliance Year 2000. For that year, NOx emissions exceeded programmatic allocations (by 11%) primarily due to emissions from electric generating facilities during the California energy crisis. For Compliance Year 2014, audited NOx emissions were 23% less than programmatic NOx allocations and audited SOx emissions were 23% less than programmatic SOx allocations.

Audit Findings

The audit of the RECLAIM Program's Compliance Year 2014 and trades of RTCs that occurred during calendar year 2015 show:

- *Overall Compliance* Audited NOx and SOx emissions from RECLAIM facilities were significantly below programmatic allocations.
- *Universe* The RECLAIM universe consisted of 275 facilities as of June 30, 2014. One facility was included, no facility was excluded, and four facilities in the RECLAIM universe shut down during Compliance Year 2014. Thus, 272 facilities were in the RECLAIM universe on June 30, 2015, the end of the Compliance Year 2014.

One facility was newly included in NOx RECLAIM because they reported NOx emissions from permitted sources in excess of four tons a year. Of the four facilities that shut down, one facility was sold and consolidated its operations with its parent company, whereas another facility had all equipment removed from the site and abandoned the property. The third facility's representative was unwilling to provide any reason for the shutdown other than it was because they are no longer making rocket engines. This property was sold for development. The fourth facility shut down and filed for bankruptcy.

- Facility Compliance The vast majority of RECLAIM facilities complied with their • allocations during the 2014 compliance year (96% of NOx facilities and 97% of SOx facilities). Twelve facilities (4% of total facilities) exceeded their allocations (11 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocation) during Compliance Year 2014. The 11 facilities that exceeded their NOx allocations had total NOx emissions of 140.1 tons and did not have adequate allocations to offset 32.4 of those tons. The exceedances represent 0.33% of total RECLAIM NOx universe allocations and 23.1% of total NOx emissions from the 11 facilities. The one SOx facility that exceeded its SOx allocation had total SOx emissions of 311.1 tons and did not have adequate allocations to offset 26.3 tons. This exceedance represents 0.93% of total RECLAIM SOx universe allocations and 8.5% of total SOx emissions from this facility. Pursuant to Rule 2010(b)(1)(A), all 12 facilities had their respective exceedances deducted from their annual allocations for the compliance year subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2014 allocations.
- Job Impacts Based on a survey of the RECLAIM facilities, the RECLAIM program had minimal impact on employment during the 2014 compliance year, which is consistent with previous years. RECLAIM facilities reported an overall net gain of 266 jobs, representing 0.26% of their total employment. None of the four RECLAIM facilities that shut down during Compliance Year 2014 cited RECLAIM as a contributing factor to the decision to shut down. No facilities reported a gain or loss of jobs due to RECLAIM. The job loss and job gain data are compiled strictly from reports submitted by RECLAIM facilities, and SCAQMD staff is not able to verify the accuracy of the reported job impacts data.
- *Trading Activity* The RTC trading market activity during calendar year 2015 was comparable in terms of number of trades, higher with respect to volume (by 38%), but substantially higher with respect to total value (by 89%) when compared to calendar year 2014. A total of over \$1.34 billion in RTCs has been traded since the adoption of RECLAIM, of which \$197.1 million occurred in calendar year 2015 (compared to \$104.2 million in calendar year 2014), excluding swaps.

The average annual prices of infinite-year block (IYB) and all compliance years discrete-year NOx and SOx RTCs traded in calendar year 2015 were below the applicable review thresholds for average RTC prices. The average annual prices of RTCs traded during calendar years 2014 and 2015 are summarized and compared to the applicable thresholds in Tables 1 and 2 below:

		Average I	Review Thresholds (\$/ton)			
Year Traded	2013 NOx RTC	2014 NOx RTC	2015 NOx RTC	2016 NOx RTC	Rule 2015(b)(6)	Health and Safety Code §39616(f)
2014	\$1,065	\$1,910	\$3,779	None traded	\$15,000	\$41.501
2015		\$1,039	\$1,642	\$2,833	\$15,000	\$41,591
Year Traded	2013 SOx RTC	2014 SOx RTC	2015 SOx RTC	2016 SOx RTC	Rule 2015(b)(6)	Health and Safety Code §39616(f)
2014	\$378	\$400	None traded	None traded	\$15,000	\$29,946
2015		\$483	\$380	None traded	\$15,000	\$29,940

Table 1 – Average Prices for Discrete-Year RTCs Traded during Calendar Years 2014 and 2015

Table 2 – Average Prices for IYB RTCs Traded during Calendar Years 2014 and 2015

	Average Price (\$/ton)		Review Threshold (\$/ton)
RTCs	Traded in 2014	Traded in 2015	[Health and Safety Code §39616(f)]
NOx	\$110,509	\$199,685	\$623,866
SOx	\$80,444	\$53,665	\$449,184

- *Role of Investors* Investors were active in the RTC market. Based on both overall trading values and volume of NOx trades with price, investors' involvement in 2015 was greater when compared to calendar year 2014. However, with respect value and volume of SOx trades with price, investors' involvement decreased. Investors were involved in 147 of the 201 discrete NOx trades with price, and 2 of the 6 discrete SOx trades with price. With respect to IYB trades, investors' participation was significant and were involved with 44 of 47 IYB NOx trades with price, and all of the 4 IYB SOx trades with price. Compared to calendar year 2014, investor holdings of total IYB NOx RTCs decreased from 4.9% to 1.9%, but increased for total IYB SOx RTCs from 0.9% to 3.3% at the end of calendar year 2015. Investors are those who purchase RTCs but are not RECLAIM facilities or brokers. (Brokers typically do not actually purchase RTCs but facilitate transactions.)
 - Other Findings RECLAIM also met other applicable requirements including meeting the applicable federal offset ratio under New Source Review and having no significant seasonal fluctuation in emissions. Additionally, there is no evidence that RECLAIM resulted in any increase in health impacts due to emissions of air toxics. RECLAIM facilities and non-RECLAIM facilities are subject to the same requirements for controlling air toxic emissions.

Attachment

Annual RECLAIM Audit Report for 2014 Compliance Year

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for 2014 Compliance Year

March 4, 2016

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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EXECUTIVE OFFICER Barry R. Wallerstein, D.Env.

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LIST OF ABBREVIATIONS

AAQS ACEMS AER APEP AQMP BACT BARCT CAA CARB CCAA CCR CEMS CEQA CGA CPMS EDR EGF ERC IYB RTC LAER LAP MDP MRR MSERC NAAQS NNI NOX NSR ODC OEHHA QCER RACT RATA RECLAIM RTC RATA RECLAIM RTC RATA RECLAIM RTC RATA RECLAIM RTC RATA RECLAIM RTC RATA RECLAIM RTC RATA RECLAIM RTC SOX SOON SSC TAC	Ambient Air Quality Standards Alternative Continuous Emissions Monitoring System(s) Annual Emission Report Annual Permit Emissions Program Air Quality Management Plan Best Available Control Technology Best Available Retrofit Control Technology Clean Air Act California Air Resources Board California Clean Air Act California Code of Regulations Continuous Emissions Monitoring System(s) California Environmental Quality Act Cylinder Gas Audit Continuous Process Monitoring System(s) Electronic Data Reporting Electricity Generating Facility Emission Reduction Credit Infinite-Year Block RECLAIM Trading Credit Lowest Achievable Emission Rate Laboratory Approval Program Missing Data Procedures Monitoring, Reporting and Recordkeeping Mobile Source Emission Reduction Credit National Ambient Air Quality Standards No Net Increase Oxides of Nitrogen New Source Review Ozone Depleting Compound Office of Environmental Health Hazard Assessment Quarterly Certification of Emissions Report Reasonably Available Control Technology Relative Accuracy Test Audit Regional CLean Air Incentives Market RECLAIM Trading Credit Remote Terminal Unit South Coast Air Quality Management District State Implementation Plan Oxides of Sulfur Surplus Off-Road Opt-In for NOx Stationary Source Committee Toxic Air Contaminant
SOON	Surplus Off-Road Opt-In for NOx
SSC	Stationary Source Committee
TAC	Toxic Air Contaminant
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WATERS	Web Access To Electronic Reporting System
WAIERO	Web Access TO Electronic Reporting System

EXECUTIVE SUMMARY

Introduction

The South Coast Air Quality Management District (SCAQMD) Governing Board adopted the REgional CLean Air Incentives Market (RECLAIM) program on October 15, 1993. The RECLAIM program represented a significant departure from traditional command-and-control regulations. RECLAIM's objective is to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. This is accomplished by establishing facility-specific emissions reduction targets without being prescriptive regarding the method of attaining compliance with the targets. Each facility may determine for itself the most cost-effective approach to reducing emissions, including reducing emissions at their facility, and/or purchasing RECLAIM Trading Credits (RTCs) from other RECLAIM facilities, or from other RTC holders.

Rule 2015 - Backstop Provisions includes provisions for annual program audits focusing on specific topics, as well as a one-time comprehensive audit of the program's first three years, to ensure that RECLAIM is meeting all state and federal requirements and other performance criteria. Rule 2015 also provides backstop measures if the specific criteria are not met. This report constitutes the Rule 2015 annual program audit report for Compliance Year 2014 (January 1 through December 31, 2014 for Cycle 1 and July 1, 2014 through June 30, 2015 for Cycle 2 facilities). This annual audit report covers activities for the twenty-first year of the program.

Chapter 1: RECLAIM Universe

When RECLAIM was adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2014, the overall changes in RECLAIM participants were 129 facilities included into the program, 70 facilities excluded from the program, and 178 facilities ceased operation. Thus, the RECLAIM universe consisted of 275 active facilities at the end of Compliance Year 2013 (December 31, 2013 for Cycle 1 facilities and June 30, 2014 for Cycle 2 facilities). During Compliance Year 2014 (January 1, 2014 through December 31, 2014 for Cycle 1 facilities and July 1, 2014 through June 30, 2015 for Cycle 2 facilities), one facility was included into the RECLAIM universe, no facility was excluded, and four facilities (one facility in both the NOx and SOx universes and three in the NOx universe only) shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of three facilities in the universe, bringing the total number of active RECLAIM facilities to 272 as of the end of Compliance Year 2014.

Chapter 2: RTC Allocations and Trading

On November 5, 2010, the Governing Board adopted amendments to SOx RECLAIM to phase in SOx reductions beginning in Compliance Year 2013 and full implementation in Compliance Year 2019 and beyond. The amendments will result in an overall reduction of 48.4% (or 5.7 tons/day) in SOx allocations when

fully implemented (Compliance Year 2019 and beyond). For Compliance Year 2014, the second year of implementation, the SOx allocation supply was reduced by 34% (or 4.0 tons/day, which is an additional 1.0 ton/day reduction from the previous compliance year) to 2,839 tons. There was no programmatic allocation reduction in NOx RTCs during Compliance Year 2014. However, on December 4, 2015, the Governing Board adopted amendments to NOx RECLAIM to phase in additional NOx reductions beginning in Compliance Year 2016 and continue through Compliance Year 2022. The amendment resulted in an overall NOx reduction of 45% (or 12 tons/day) when fully implemented for Compliance Year 2022 and beyond.

The overall NOx RTC supply increased by 11.3 tons and the SOx RTC supply decreased by 0.6 tons during Compliance Year 2014. The changes were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12).

During calendar year 2015, there were 356 registered RTC transactions with a total value of over \$197 million traded, excluding the values reported for swap transactions. Since the inception of the RECLAIM program in 1994, a total value of over \$1.34 billion dollars has been traded in the RTC trading market, excluding swap transactions. RTC trades are reported to SCAQMD as either discrete-year RTC transactions or infinite-year block (IYB) transactions (trades that involve blocks of RTCs with a specified start year and continuing into perpetuity). In terms of volume traded in calendar year 2015, a total of 3,371 tons of discrete NOx RTCs, 520 tons of discrete SOx RTCs, 1,234 tons of IYB NOx RTCs and 408 tons of IYB SOx RTCs were traded. The RTC trading market activity during calendar year 2015 compared to calendar year 2014 was about the same in terms of number of trades, higher in total volume (increased by 47%), and substantially higher in total value (increased by 89%).

The annual average prices of discrete-year NOx RTCs traded during calendar year 2015 were \$1,039 per ton for Compliance Year 2014 RTCs, \$1,642 per ton for Compliance Year 2015 RTCs, and \$2,833 per ton for Compliance Year 2016 RTCs. The annual average prices for discrete-year SOx RTCs traded during the same period were \$483 per ton for Compliance Year 2014 RTCs, and \$380 per ton for Compliance Year 2015 RTCs. Therefore, the annual average prices for discrete NOx and SOx RTCs for all compliance years remained well below the \$15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth in SCAQMD Rule 2015, as well as the \$41,591 per ton of NOx and \$29,946 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The annual average price during calendar year 2015 for IYB NOx RTCs was \$199,685 per ton and the annual average price for IYB SOx RTCs was \$53,665 per ton. Therefore, annual average IYB RTC prices did not exceed the \$623,866 per ton of IYB NOx RTCs or the \$449,184 per ton of IYB SOx RTCs predetermined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

Investors were again active in the RTC market during calendar year 2015. They were involved in 147 of the 201 discrete NOx trade registration and two of the six discrete SOx trade registrations with price. Investors were also involved in 44 of 47 IYB NOx and all four of the IYB SOx trades with price. Investors were involved in 91% of total value and 79% of total volume for discrete NOx trades,

and 37% of total value and 31% of total volume for discrete SOx trades. In addition, investors were involved in 92% of total value and 91% of total volume for IYB NOx trades with price. Investors were involved in all IYB SOx trades with price. At the end of calendar year 2015, investors' holdings of IYB NOx RTCs and IYB SOx RTCs were 1.9% and 3.3% of the total RECLAIM RTCs, respectively.

Chapter 3: Emission Reductions Achieved

For Compliance Year 2014, aggregate NOx emissions were below total allocations by 23% and aggregate SOx emissions were below total allocations by 23%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2014. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports. Therefore, based on audited emissions, RECLAIM achieved its targeted emission reductions for Compliance Year 2014. With respect to the Rule 2015 backstop provisions, Compliance Year 2014 aggregate NOx and SOx emissions were both well below aggregate allocations and, as such, did not trigger the requirement to review the RECLAIM program.

Chapter 4: New Source Review Activity

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2014, a total of eight NOx RECLAIM facilities had NSR NOx emission increases, and no SOx RECLAIM facilities had NSR SOx emission increases due to expansion or modification. Consistent with all prior compliance years, there were sufficient NOx and SOx RTCs available to allow for expansion, modification, and modernization by RECLAIM facilities.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio programmatically for NOx emission increases and a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2014, RECLAIM demonstrated federal equivalency with a programmatic NOx offset ratio of 73-to-1 based on the compliance year's total unused allocations and total NSR emission increases for NOx. RECLAIM inherently complies with the federally-required 1-to-1 SOx offset ratio for any compliance year, provided aggregate SOx emissions under RECLAIM are lower than or equal to aggregate SOx allocations for that compliance year. As shown in Chapter 3, there was no programmatic SOx exceedance during Compliance Year 2014. In fact, there was a surplus of SOx RTCs. Therefore, RECLAIM more than complied with the federally-required SOx offset ratio and further quantification of the SOx offset ratio is unnecessary. Compliance with the federally-required offset ratio also demonstrates compliance with any applicable state NNI requirements for new or modified sources. In addition, RECLAIM requires application of, at a minimum, California Best Available Control Technology (BACT), which is at least as stringent as federal Lowest Achievable Emission Rate (LAER). The same BACT guidelines are used to determine applicable BACT to RECLAIM and non-RECLAIM facilities.

Chapter 5: Compliance

Of the 276 NOx RECLAIM facilities audited during Compliance Year 2014, a total of 265 facilities (96%) complied with their NOx allocations, and 32 of the 33 SOx facilities (97%) complied with their SOx allocations. Twelve facilities exceeded their allocations (11 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocation) during Compliance Year 2014. The 11 facilities that exceeded their NOx allocations had aggregate NOx emissions of 140.1 tons and did not have adequate allocations to offset 32.4 tons (or 23.1%) of their combined emissions. The one SOx facility that exceeded its SOx allocation had total SOx emissions of 311.1 tons and did not have adequate allocations to offset 26.3 tons (or 8.5%). The NOx and SOx exceedance amounts are relatively small compared to the overall NOx and SOx allocations for Compliance Year 2014 (0.33% of total NOx allocations and 0.93% of total SOx allocations). The exceedances from these facilities did not impact the overall RECLAIM emission reduction goals. Pursuant to Rule 2010(b)(1)(A), these facilities had their respective exceedances deducted from their annual allocations for the compliance year subsequent to the date of SCAQMD's determination that the facilities exceeded their Compliance Year 2014 allocations. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2014 (*i.e.*, aggregate emissions for all RECLAIM facilities were well below aggregate allocations).

Chapter 6: Reported Job Impacts

This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP) reports. The analysis focuses exclusively on job impacts at RECLAIM facilities and determination if those job impacts were directly attributable to RECLAIM as reported by those facilities. Additional benefits to the local economy (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) attributable to the RECLAIM program, as well as factors outside of RECLAIM (*e.g.*, the prevailing economic climate), impact the job market. However, these factors are not evaluated in this report. Also, job losses and job gains are strictly based on RECLAIM facilities' reported information. SCAQMD staff is not able to independently verify the accuracy of the reported job impact information.

According to the Compliance Year 2014 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 266 jobs, representing 0.26% of their total employment. None of the four RECLAIM facilities that shut down during Compliance Year 2014 cited RECLAIM as a factor contributing to the decision to shutdown. No facilities reported a gain or loss of jobs due to RECLAIM.

Chapter 7: Air Quality and Public Health Impacts

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. Compliance Year 2014 NOx emissions increased 1.7% relative to Compliance Year 2013, and Compliance Year 2014 SOx emissions were 5.3% more than the previous year. Quarterly calendar year 2014 NOx emissions fluctuated within 6 percent of the mean NOx emissions for the year. Quarterly calendar year 2014 SOx emissions fluctuated within 11 percent of the

year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season for either pollutant.

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone, relative to a baseline averaged over three years (1986 through 1988), by December 31, 2000. The Basin achieved the December 2000 target for ozone well before the deadline. In calendar year 2014, the per capita exposure to ozone (the average length of time each person is exposed) continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and fine particulates, such as metals. RECLAIM facilities are subject to the same air toxic, VOC, and particulate matter regulations as other sources in the Basin. All sources are subject, where applicable, to the NSR rule for toxics (Rule 1401 and/or Rule 1401.1). In addition, new or modified sources with NOx or SOx emission increases are required to be equipped with BACT, which minimizes to the extent feasible the increase of NOx and SOx emissions. RECLAIM and non-RECLAIM facilities that emit toxic air contaminants are required to report those emissions to SCAQMD. Those emissions reports are used to identify candidates for the Toxics Hot Spots program (AB2588). This program requires emission inventories and, depending on the type and amount of emissions, facilities may be required to do public notice and/or prepare and implement a plan to reduce emissions. There is no evidence that RECLAIM facilities.

INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) REgional CLean Air Incentives Market (RECLAIM) program was adopted in October 1993 and replaced certain command-and-control rules regarding oxides of nitrogen (NOx) and oxides of sulfur (SOx) with a new market incentives program for facilities that meet the inclusion criteria. The goals of RECLAIM are to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. The RECLAIM program was designed to meet all state and federal Clean Air Act (CAA) and other air quality regulations and program requirements, as well as various other performance criteria, such as equivalent or better air quality improvement, enforcement, implementation costs, job impacts, and no adverse public health impacts.

Since RECLAIM represents a significant change from traditional command-andcontrol regulations, RECLAIM rules include provisions for program audits in order to verify that the RECLAIM objectives are being met. The rules provide for a comprehensive audit of the first three years of program implementation and for annual program audits. The audit results are used to help determine whether any program modifications are appropriate. SCAQMD staff has completed the initial tri-annual program audit and each individual annual program audit report through the 2014 Compliance Year Audit.

This report presents the annual program audit and progress report of RECLAIM's twenty-first compliance year (January 1 through December 31, 2014 for Cycle 1 and July 1, 2014 through June 30, 2015 for Cycle 2 RECLAIM facilities), also known as Compliance Year 2014. As required by Rule 2015(b)(1) – Annual Audits, this audit assesses:

- Emission reductions;
- Per capita exposure to air pollution;
- Facilities permanently ceasing operation of all sources;
- Job impacts;
- Annual average price of each type of RECLAIM Trading Credit (RTC);
- Availability of RTCs;
- Toxic risk reductions;
- New Source Review permitting activity;
- Compliance issues, including a list of facilities that were unable to reconcile emissions for that compliance year;
- Emission trends/seasonal fluctuations;
- Emission control requirement impacts on stationary sources in the program compared to other stationary sources identified in the Air Quality Management Plan (AQMP); and
- Emissions associated with equipment breakdowns.

The annual program audit report is organized into the following chapters:

1. RECLAIM Universe

This chapter discusses summarizes changes to the universe of RECLAIM sources that occurred up until July 1, 2014 (covered under the Annual RECLAIM Audit Report for 2013 Compliance Year), then discusses changes to the RECLAIM universe of sources in detail through the end of Compliance Year 2014.

2. RTC Allocations and Trading

This chapter summarizes changes in emissions allocations in the RECLAIM universe, RTC supply and RTC trading activity, annual average prices, availability of RTCs, and market participants.

3. Emission Reductions Achieved

This chapter assesses emissions trends and progress towards emission reduction goals for RECLAIM sources, emissions associated with equipment breakdowns, and emissions control requirement impacts on RECLAIM sources compared to other stationary sources. It also discusses the latest amendments to the RECLAIM program.

4. New Source Review Activity

This chapter summarizes New Source Review (NSR) activities at RECLAIM facilities.

5. Compliance

This chapter discusses compliance activities and the compliance status of RECLAIM facilities. It also evaluates the effectiveness of SCAQMD's compliance program, as well as the monitoring, reporting, and recordkeeping (MRR) protocols for NOx and SOx.

6. Reported Job Impacts

This chapter addresses job impacts and facilities permanently ceasing operation of all emission sources.

7. Air Quality and Public Health Impacts

This chapter discusses air quality trends in the South Coast Air Basin, seasonal emission trends for RECLAIM sources, per capita exposure to air pollution, and the toxic impacts of RECLAIM sources.

CHAPTER 1 RECLAIM UNIVERSE

Summary

When RECLAIM was adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2014, the overall changes in RECLAIM participants were 129 facilities included into the program, 70 facilities excluded from the program, and 178 facilities ceased operation. Thus, the RECLAIM universe consisted of 275 active facilities at the end of Compliance Year 2013 (December 31, 2013 for Cycle 1 facilities and June 30, 2014 for Cycle 2 facilities). During Compliance Year 2014 (January 1, 2014 through December 31, 2014 for Cycle 1 facilities and July 1, 2014 through June 30, 2015 for Cycle 2 facilities), one facility was included into the RECLAIM universe, no facility was excluded, and four facilities (one facility in both the NOx and SOx universes and three in the NOx universe only) shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of three facilities in the universe, bringing the total number of active RECLAIM facilities to 272 as of the end of Compliance Year 2014.

Background

The RECLAIM program replaced the traditional "command-and-control" rules for a defined list of facilities participating in the program (the RECLAIM "universe"). The criteria for inclusion in the RECLAIM program are specified in Rule 2001 – Applicability. Facilities are generally subject to RECLAIM if they have NOx or SOx reported emissions greater than or equal to four tons per year in 1990 or any subsequent year. However, certain facilities are categorically excluded from RECLAIM. The categorically excluded facilities include dry cleaners; restaurants; police and fire fighting facilities; construction and operation of landfill gas control, landfill gas processing or landfill gas energy facilities; public transit facilities, potable water delivery operations; facilities that converted all sources to operate on electric power prior to October 1993; and facilities, other than electric generating facilities established on or after January 1, 2001, located in the Riverside County portions of the Mojave Desert Air Basin or the Salton Sea Air Basin.

Other categories of facilities are not automatically included but do have the option to enter the program. These categories include electric utilities (exemption only for the SOx program); equipment rental facilities; facilities possessing solely "various locations" permits; schools or universities; portions of facilities conducting research operations; ski resorts; prisons; hospitals; publicly-owned municipal waste-to-energy facilities; publically-owned sewage treatment facilities operating consistent with an approved regional growth plan; electrical power generating systems owned and operated by the Cities of Burbank, Glendale, or Pasadena or their successors; facilities on San Clemente Island; agricultural facilities; and electric generating facilities that are new on or after January 1, 2001 and located in the Riverside County portions of the Mojave Desert Air Basin or the Salton Sea Air Basin. An initial universe of 394 RECLAIM

facilities was developed using the inclusion criteria initially adopted in the RECLAIM program based on 1990, 1991 and 1992 facility reported emissions data.

A facility that is not in a category that is specifically excluded from the program may voluntarily join RECLAIM regardless of its emission level. Additionally, a facility may be required to enter the RECLAIM universe if:

- It increases its NOx and/or SOx emissions from permitted sources above the four ton per year threshold; or
- It ceases to be categorically excluded and its reported NOx and/or SOx emissions are greater than or equal to four tons per year; or
- It is determined by SCAQMD staff to meet the applicability requirements of RECLAIM, but was initially misclassified as not subject to RECLAIM.

At the time of joining RECLAIM, each RECLAIM facility is issued an annually declining allocation of emission credits ("RECLAIM Trading Credits" or "RTCs") based on its historic production level (if the facility existed prior to January 1, 1993), external offsets it previously provided, and any Emission Reduction Credits (ERCs) generated at and held by the facility. Each RECLAIM facility's RTC holdings constitute an annual emissions budget. RTCs may be bought or sold as the facility deems appropriate (see Chapter 2 – RTC Allocations and Trading).

RECLAIM facilities that permanently go out of business are removed from the active emitting RECLAIM universe, but may retain their remaining RTCs and participate in the trading market.

Staff has periodically initiated the process of reviewing past Annual Emission Reports (AERs) from non-RECLAIM facilities to determine applicability of RECLAIM pursuant to Rule 2001(b) – Criteria for Inclusion in RECLAIM. Commencing in 2012, an annual review process was implemented. This facility inclusion process begins with SCAQMD staff compiling a list of non-RECLAIM (pollutant-specific) facilities that emitted NOx or SOx emissions greater than or equal to four tons per year, as reported under the AER program, for potential inclusion into RECLAIM. This part of the process involves screening for emissions only from equipment that are subject to RECLAIM (e.g., emissions from on-site, off-road mobile sources are not included). From this initial list, each facility's business activity/operations are evaluated based on SCAQMD's records for possible categorical exemption pursuant to Rule 2001(i). Facilities that qualify under these categorical exemptions are removed from the list. The remaining facilities are informed of their potential inclusion into RECLAIM and are given the opportunity to provide records to demonstrate why the facility should not be included under RECLAIM. This may include additional information about the facility's operations that would qualify it for categorical exemption from RECLAIM pursuant to Rule 2001(i), or correcting their AER-reported emissions with supporting documentation. Once a facility has gualified for inclusion, a draft facility permit is prepared, sent to the facility for comments, finalized and issued.

Universe Changes

In the early years of the RECLAIM program, facilities initially identified for inclusion were excluded upon determination that they did not meet the criteria for

inclusion (e.g., some facilities that had reported emissions from permitted sources above four tons in a year were determined to have over-reported their emissions and subsequently submitted corrected emissions reports reflecting emissions from permitted sources below four tons per year). Additionally, facilities that were not part of the original universe were subsequently added to the program based on the inclusion criteria mentioned above. The overall changes to the RECLAIM universe from the date of adoption (October 15, 1993) through June 30, 2014 (the last day of Compliance Year 2013 for Cycle 2 facilities) were: the inclusion of 129 facilities (including 34 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 70 facilities, and the shutdown of 178 facilities. Thus, the net change in the RECLAIM universe from October 15, 1993 through June 30, 2014 was a decrease of 119 facilities from 394 to 275 facilities. In Compliance Year 2014 (January 1, 2014 through December 31, 2014 for Cycle 1 facilities and July 1, 2014 through June 30, 2015 for Cycle 2 facilities), one facility was included, no facility was excluded, and four facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 272 facilities. The Compliance Year 2014 RECLAIM universe includes 240 NOx-only, no SOx-only, and 32 both NOx and SOx RECLAIM facilities. The list of active facilities in the RECLAIM universe as of the end of Compliance Year 2014 is provided in Appendix A.

Facility Inclusions and Exclusions

One facility was included in NOx RECLAIM pursuant to Rule 2001(b) – Criteria for Inclusion in RECLAIM because it reported NOx emissions from permitted sources in excess of four tons a year. Appendix B lists the facility and the reason for its inclusion. No facility was excluded from the RECLAIM universe during Compliance Year 2014. Currently, there are 23 facilities in various stages of the inclusion review process. Additional inclusions will be addressed in future RECLAIM annual program audits as facility eligibility is confirmed. Per Rule 2001(c)(2), a facility is subject to RECLAIM provisions on the date a facility permit containing RECLAIM requirements is issued.

Facilities Permanently Ceasing Operations

Four RECLAIM facilities permanently ceased operations in Compliance Year 2014. One facility was sold and consolidated its operations with its parent company. A second facility had all equipment removed from the site and abandoned the property. Staff attempted to contact the owners, but were unable to obtain further clarification regarding the reason for shutdown. The third facility's representative was unwilling to provide any reason for the shutdown other than it was because they are no longer making rocket engines. The property was sold for development. The fourth facility shut down and filed for bankruptcy. Again, staff attempted to contact the owners, but were unable to obtain further clarification regarding the reason for shutdown. None of these facilities cited RECLAIM as a cause for their shutting down. Three of the four facilities permanently ceasing operations were in NOx RECLAIM only. The remaining facility was in both NOx and SOx RECLAIM. Appendix C lists these facilities and provides brief descriptions of the reported reasons for their closures.

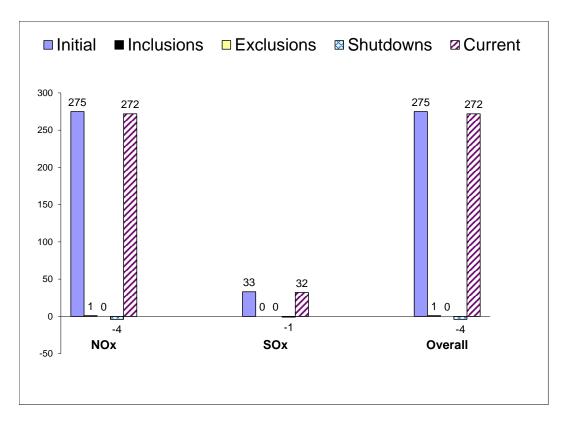
The above mentioned changes to the RECLAIM Universe resulted in a net decrease of three facilities in the RECLAIM universe during Compliance Year 2014. Table 1-1 summarizes overall changes in the RECLAIM universe between the start of the program and end of Compliance Year 2014 (December 31, 2014 for Cycle 1 facilities and June 30, 2015 for Cycle 2 facilities). Changes to the RECLAIM universe that occurred in Compliance Year 2014 are illustrated in Figure 1-1.

Table 1-1 RECLAIM Universe Changes

	NOx Facilities	SOx Facilities	Total* Facilities
Universe – October 15, 1993 (Start of Program)	392	41	394
Inclusions – October 15, 1993 through Compliance Year 2013	129	13	129
Exclusions – October 15, 1993 through Compliance Year 2013	-69	-4	-70
Shutdowns – October 15, 1993 through Compliance Year 2013	-177	-17	-178
Universe – June 30, 2014	275	33	275
Inclusions –Compliance Year 2014	1	0	1
Exclusions –Compliance Year 2014	0	0	0
Shutdowns –Compliance Year 2014	-4	-1	-4
Universe – End of Compliance Year 2014	272	32	272

"Total Facilities" is <u>not</u> the sum of NOx and SOx facilities due to the overlap of some facilities being in both the NOx and SOx universes.

Figure 1-1 Universe Changes in Compliance Year 2014



CHAPTER 2 RTC ALLOCATIONS AND TRADING

Summary

On November 5, 2010, the Governing Board adopted amendments to SOx RECLAIM to phase in SOx reductions beginning in Compliance Year 2013 and full implementation in Compliance Year 2019 and beyond. The amendments will result in an overall reduction of 48.4% (or 5.7 tons/day) in SOx allocations when fully implemented (Compliance Year 2019 and beyond). For Compliance Year 2014, the second year of implementation, the SOx allocation supply was reduced by 34% (or 4.0 tons/day, which is an additional 1.0 ton/day reduction from the previous compliance year) to 2,839 tons. There was no programmatic allocation reduction in NOx RTCs during Compliance Year 2014. However, on December 4, 2015, the Governing Board adopted amendments to NOx RECLAIM to phase in additional NOx reductions beginning in Compliance Year 2016 and continue through Compliance Year 2022. The amendment resulted in an overall NOx reduction of 45% (or 12 tons/day) when fully implemented for Compliance Year 2022 and beyond.

The overall NOx RTC supply increased by 11.3 tons and the SOx RTC supply decreased by 0.6 tons during Compliance Year 2014. The changes were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12).

During calendar year 2015, there were 356 registered RTC transactions with a total value of over \$197 million traded, excluding the values reported for swap transactions. Since the inception of the RECLAIM program in 1994, a total value of over \$1.34 billion dollars has been traded in the RTC trading market, excluding swap transactions. RTC trades are reported to SCAQMD as either discrete-year RTC transactions or infinite-year block (IYB) transactions (trades that involve blocks of RTCs with a specified start year and continuing into perpetuity). In terms of volume traded in calendar year 2015, a total of 3,371 tons of discrete NOx RTCs, 520 tons of discrete SOx RTCs, 1,234 tons of IYB NOx RTCs and 408 tons of IYB SOx RTCs were traded. The RTC trading market activity during calendar year 2015 compared to calendar year 2014 was about the same in terms of number of trades, higher in total volume (increased by 47%), and substantially higher in total value (increased by 89%).

The annual average prices of discrete-year NOx RTCs traded during calendar year 2015 were \$1,039 per ton for Compliance Year 2014 RTCs, \$1,642 per ton for Compliance Year 2015 RTCs, and \$2,833 per ton for Compliance Year 2016 RTCs. The annual average prices for discrete-year SOx RTCs traded during the same period were \$483 per ton for Compliance Year 2014 RTCs, and \$380 per ton for Compliance Year 2015 RTCs. Therefore, the annual average prices for discrete NOx and SOX RTCs for all compliance years remained well below the \$15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth in SCAQMD Rule 2015, as well as the \$41,591 per ton of NOx and \$29,946 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code \$39616(f).

The annual average price during calendar year 2015 for IYB NOx RTCs was \$199,685 per ton and the annual average price for IYB SOx RTCs was \$53,665 per ton. Therefore, annual average IYB RTC prices did not exceed the \$623,866 per ton of IYB NOx RTCs or the \$449,184 per ton of IYB SOx RTCs predetermined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code \$39616(f).

Investors were again active in the RTC market during calendar year 2015. They were involved in 147 of the 201 discrete NOx trade registration and two of the six discrete SOx trade registrations with price. Investors were also involved in 44 of 47 IYB NOx and all four of the IYB SOx trades with price. Investors were involved in 91% of total value and 79% of total volume for discrete NOx trades, and 37% of total value and 31% of total volume for discrete SOx trades. In addition, investors were involved in 92% of total value and 91% of total volume for IYB NOx trades with price. Investors were involved in all IYB SOx trades with price. At the end of calendar year 2015, investors' holdings of IYB NOx RTCs and IYB SOx RTCs were 1.9% and 3.3% of the total RECLAIM RTCs, respectively.

Background

SCAQMD issues each RECLAIM facility emissions allocations for each compliance year, according to the methodology specified in Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx). For facilities existed prior to January 1, 1993, the allocation is calculated based on each facility's historic production levels as reported to SCAQMD in its annual emission reports (AERs), NOx emission factors listed in Tables 1, 3, and 6 of Rule 2002 or SOx emission factors in Table 2 and 4 of Rule 2002 for the appropriate equipment category, any qualified¹ external offsets previously provided by the facility, and any unused Emission Reduction Credits (ERCs) generated at and held by the facility. Facilities entering RECLAIM after 1994 are issued allocations, if eligible, for the Compliance Year of entry and all years after, and Compliance Year 1994 allocations (also known as the facility's "Starting Allocation") for the purpose of establishing New Source Review trigger level.

These allocations are issued as RTCs, denominated in pounds of NOx or SOx with a specified 12-month term. Each RTC may only be used for emissions occurring within the term of that RTC. The RECLAIM program has two staggered compliance cycles—Cycle 1 with a compliance period of January 1 through December 31 of each year, and Cycle 2 with a compliance period of July 1 of each year through June 30 of the following year. Each RECLAIM facility is assigned to either Cycle 1 or Cycle 2 and the RTCs it is issued (if any) have corresponding periods of validity.

The issuance of allocations for future years provides RECLAIM facilities guidance regarding their future emission reduction requirements. Facilities can plan their compliance strategies by reducing actual emissions or securing needed RTCs through trade registrations (or a combination of the two), based on their operational needs.

¹ Only external offsets provided at a one-to-one offset ratio after the base year used for allocation quantification purposes.

RECLAIM facilities may acquire RTCs issued for either cycle through trading and apply them to emissions, provided that the RTCs are used for emissions occurring within the RTCs' period of validity and the trades are made during the appropriate time period. RECLAIM facilities have until 30 days after the end of each of the first three quarters of each compliance year to reconcile their quarterly and year-to-date emissions, and until 60 days after the end of each compliance year to reconcile their last quarter and total annual emissions by securing adequate RTCs. Please note that, although other chapters in this report present and discuss Compliance Year 2014 data, RTC trading and price data discussed in this chapter are for calendar year 2015.

RTC Allocations and Supply

The methodology for determining RTC allocations is established by Rule 2002. According to this rule, allocations may change when the universe of RECLAIM facilities changes, emissions associated with the production of re-formulated gasoline increase or decrease, reported historical activity levels are updated, or emission factors used to determine allocations are changed. In addition to these SCAQMD-allocated RTCs, RTCs may be generated by conversion of emissions reduction credits from mobile and area sources pursuant to approved protocols. The total RTC supply in RECLAIM is made up of all RECLAIM facilities' allocations, conversions of ERCs owned by RECLAIM and non-RECLAIM facilities², emissions associated with the production of re-formulated gasoline, and conversion of emission reduction credits from mobile sources and area sources pursuant to approved protocols. The SCAQMD Governing Board may adopt additional rules that affect RTC supply. Changes in the RTC supply during Compliance Year 2014 are discussed below.

Allocations Adjustments Due to Inclusion and Exclusion of Facilities

Facilities existing prior to October 1993 and entering RECLAIM after 1994 may receive allocations just like facilities that were included at the beginning of the program. However, allocations issued for these facilities are only applicable for the compliance year of entry and forward. In addition, these facilities are issued allocations and Non-tradable/Non-usable Credits for Compliance Year 1994 for the sole purpose of establishing their starting allocation to ensure compliance with offset requirements under Rule 2005 - New Source Review for RECLAIM and the trading zone restriction to ensure net ambient air quality improvement within the sensitive zone established by Health and Safety Code §40410.5. These Compliance Year 1994 credits are not allowed to be used to offset current emissions because they have expired. Similarly, if an existing facility that was previously included in RECLAIM is subsequently excluded because it is determined to be categorically excluded or exempt pursuant to Rule 2001(i) or to not have emitted four tons or more of NOx or SOx in a year, any RTCs it was issued upon entering RECLAIM are removed from the market upon its exclusion.

The sole NOx facility included in Compliance Year 2014 was not eligible to receive any allocations because it was established after 1994, the start of RECLAIM.

² The window of opportunity to convert ERCs to RTCs other than during the process of a non-RECLAIM facility entering the program closed June 30, 1994.

Allocations Adjustments Due to Clean Fuel Production

Rule 2002(c)(12) – Clean Fuel Adjustment to Starting Allocation, provides refineries with RTCs to compensate for their actual emissions increases caused by the production of California Air Resources Board (CARB) Phase II reformulated gasoline. The amount of these RTCs is based on actual emissions for the subject compliance year and historical production data. The quantities of such clean fuels RTCs needed were projected based on the historical production data submitted, and qualifying refineries were issued in 2000 an aggregate baseline of 86.5 tons of NOx and 42.3 tons of SOx for Compliance Year 1999, 101.8 tons of NOx and 41.4 tons of SOx for Compliance Year 2000, and 98.4 tons of NOx and 40.2 tons of SOx for each subsequent Compliance Year on the basis of those projections. These refineries are required to submit, at the end of each compliance year in their Annual Permit Emissions Program (APEP) report, records to substantiate actual emission increases due solely to the production of reformulated gasoline. If actual emission increases for a subject year are different than the projected amount, the RTCs issued are adjusted accordingly (*i.e.*, excess RTCs issued are deducted if emissions were less than projected; conversely, additional RTCs are issued if emissions were higher than projected).

As a result of the amendment to Rule 2002 in January 2005 to further reduce RECLAIM NOx allocations, the NOx historical baseline Clean Fuel Adjustments for Compliance Year 2007 and subsequent years held by the facility were also reduced by the appropriate factors as stated in Rule 2002(f)(1)(A). On the other hand, Rule 2002(c)(12) provides refineries a Clean Fuels adjustment based on actual emissions. Therefore, each refinery is subject to an adjustment at the end of each compliance year equal to the difference between the amount of actual emission increases due solely to production of reformulated gasoline at each refinery and the amount of credits it was issued in 2000 after discounting by the factors for the corresponding compliance year. For Compliance Year 2014, the overall effect of adjusting NOx allocations to account for these differences was a total of 11.3 tons of NOx RTCs (0.1% of total NOx allocation for Compliance Year 2014) added to, and 0.6 tons of SOx RTCs (less than 0.1% of total SOx allocation for Compliance Year 2014) deducted from, refineries' Compliance Year 2014 holdings.

Changes in RTC Allocations Due to Activity Corrections

RECLAIM facilities' allocations are determined by their reported historical activity levels (*e.g.*, fuel usage, material usage, or production) in their AERs. In the case where a facility's AER reported activity levels are updated within five years of the AER due date, its allocation is adjusted accordingly³. There were no changes in RTC allocations due to activity corrections in Compliance Year 2014.

Conversions of Other Types of Emission Reduction Credits

Conversions of Mobile Source Emission Reduction Credits (MSERCs) and other types of emission reduction credits, other than regular stationary source ERCs issued under Regulation XIII – New Source Review, to RTCs are allowed under

³ Pursuant to Rule 2002(b)(5) as amended on December 4, 2015, any AERs (including corrections) submitted more than five years after the original due date are not considered in the RTC quantification process.

Rule 2008 – Mobile Source Credits, and several programs under Regulation XVI – Mobile Source Offset Programs and Regulation XXV – Intercredit Trading. Conversion of these credits to RTCs is allowed based on the respective approved protocol specified in each rule. Currently, Rules 1610 – Old-Vehicle Scrapping and 1612 – Credits for Clean On-Road Vehicles allow the creation of MSERCs. However, there are no State Implementation Plan (SIP) approved protocols for conversion of MSERCs to RTCs. No new RTCs were issued by conversion of other types of emission reduction credits in Compliance Year 2014.

Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net increase of 11.3 tons of NOx RTCs (0.1% of the total) and a decrease of 0.6 tons of SOx RTCs (less than 0.1% of the total) for Compliance Year 2014. Table 2-1 summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2014 pursuant to Rule 2002.

Table 2-1

Changes in NOx and SOx RTC Supplies during Compliance Year 2014 (tons/year)

Source	NOx	SOx
Universe changes	0	0
Clean Fuel/Reformulated Gasoline	11.3	-0.6
Activity corrections	0	0
MSERCs	0	0
Net change	11.3	-0.6

Note: The data in this table represents the changes that occurred over the course of Compliance Year 2014 to the Compliance Year 2014 aggregate NOx and SOx RTC supplies originally issued pursuant to Rule 2002, not the difference between 2014 aggregate RTC supply and that for any other compliance year.

Allocation Reduction Resulting from BARCT Review

Pursuant to California Health and Safety Code §40440, SCAQMD is required to monitor the advancement in BARCT and periodically re-assess the RECLAIM program to ensure that RECLAIM achieves equivalent emission reductions to the command-and-control BARCT rules it subsumes. This assessment is done periodically as part of AQMP development. This process resulted in 2003 AQMP Control Measure #2003 CMB-10 - Additional NOx Reductions for RECLAIM (NOx) calling for additional NOx reductions from RECLAIM sources. SCAQMD staff started the rule amendment process in 2003, including a detailed analysis of control technologies that qualified as BARCT for NOx, and held lengthy discussions with stakeholders-including regulated industry, environmental groups, the California Air Resources Board (CARB), and the United States Environmental Protection Agency (USEPA). On January 7, 2005, the Governing Board implemented CMB-10 by adopting changes to the RECLAIM program that resulted in a 22.5% reduction of NOx allocations from all RECLAIM facilities. The reductions were phased in commencing in Compliance Year 2007 and have been fully implemented since Compliance Year 2011.

Similarly, the 2012 AQMP adopted by the Governing Board in 2012, included Control Measure CMB-01- Further NOx Reductions for RECLAIM that identified a

new group of RECLAIM NOx emitting equipment that should be reviewed for new BARCT. The rule making process for the amendment to the NOx RECLAIM program implementing CMB-01 started in 2012. On December 4, 2015, the Governing Board adopted amendments to the RECLAIM rules that resulted in an additional reduction of 12 tons of NOx per day when fully implemented in Compliance Year 2022. The reductions are to be phased-in beginning with 2 tons per day in Compliance Year 2016 and 2017, 3 tons per day in Compliance Year 2018, 4 tons per day in Compliance Year 2019, 6 tons per day in Compliance Year 2020, 8 tons per day in Compliance Year 2021 and 12 tons per day in Compliance Year 2022 and thereafter.

On November 5, 2010, the Governing Board adopted changes to the RECLAIM program implementing the 2007 AQMP Control Measure CMB-02 – Further SOx Reductions for RECLAIM (SOx). These amendments resulted in a BARCT-based overall reduction of 5.7 tons SOx per day when fully implemented in Compliance Year 2019 (the reductions are being phased in from Compliance Year 2013 through Compliance Year 2019: 3.0 tons per day in 2013; 4.0 tons per day in years 2014, 2015, and 2016; 5.0 tons per day in 2017 and 2018; and 5.7 tons per day starting in 2019 and continuing thereafter). This reduction in SOx is an essential part of the South Coast Air Basin's effort in attaining the federal 24-hour average PM2.5 standard by the year 2020.

Figure 2-1 illustrates the total NOx RTC supply through the end of Compliance Year 2023 incorporating all the changes discussed above. Figure 2-2 illustrates the total SOx RTC supply through the end of Compliance Year 2020 incorporating the changes discussed.

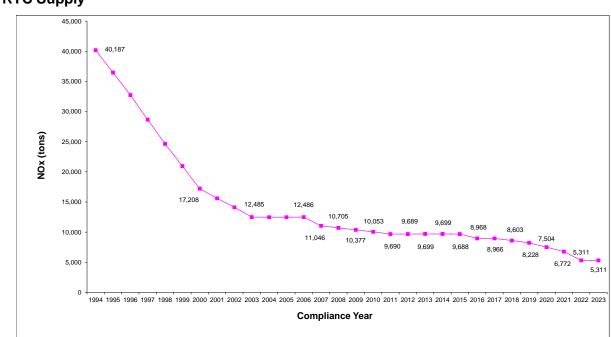
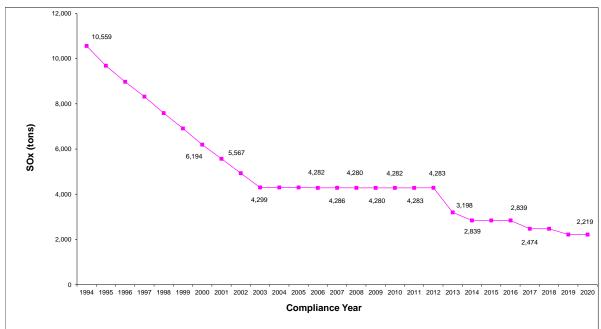


Figure 2-1 NOx RTC Supply

Figure 2-2 SOx RTC Supply



Upcoming Proposals for Credit Generation

Proposed Rule 2511 – Credit Generation Program for Locomotive Head End Power Unit Engines and Proposed Rule 2512 – Credit Generation Program for Ocean-Going Vessels at Berth are two potential rules that could generate credits for the RECLAIM program. Proposed Rule 2511 would allow generation of emission reduction credits through the voluntary repowering of diesel–fueled auxiliary head end power generating units on passenger locomotives with cleaner engines. Proposed Rule 2512 would allow generation of credits for emission through the control of exhaust emissions from auxiliary engines and/or boilers used on Ocean-Going Vessels while at berth in a commercial marine port. Both of these proposed rules are listed on the Rule and Control Measure Forecast as rule activities for calendar year 2016.

RTC Trades

RTC Price Reporting Methodology

RTC trades are reported to SCAQMD as one of two types: discrete-year RTC transactions or infinite-year block (IYB) transactions (trades that involve blocks of RTCs with a specified start year and continuing into perpetuity). Prices for discrete-year trades are reported in terms of dollars per pound and prices for IYB trades are reported as total dollar value for total amount of IYB RTCs traded. In addition, the trading partners are required to identify any swap trades. Swap trades occur when trading partners exchange different types of RTCs. These trades maybe of equal value or different values, in which case some amount of money or credits are also included in swap trades (additional details on swap

trades are discussed later in this chapter). Prices reported for swap trades are based on the agreed upon value of the trade by the participants, and do not involve exchange of funds for the total value agreed upon. As such, the reported prices for swap trades can be somewhat arbitrary and are, therefore, excluded from the calculation of annual average prices. In this report, the annual average prices for discrete-year RTCs are averaged in dollars per ton of RTCs for each compliance year, while the average price for IYB RTCs are averaged as a total dollar value per ton of IYB RTCs.

RTC Price Thresholds for Program Review

Rule 2015(b)(6) specifies that, if the annual average price of discrete NOx or SOx RTCs exceeds \$15,000 per ton, the Executive Officer will conduct an evaluation and review of the compliance and enforcement aspects of RECLAIM. The Governing Board has also established average RTC price overall program review thresholds pursuant to Health and Safety Code §39616(f). Unlike the \$15,000 per ton threshold for review of the compliance and enforcement aspects of RECLAIM, these overall program review thresholds are adjusted by CPI each year. In addition, according to Rule 2002(f)(1)(S), if the annual average price of discrete SOx RTCs for any compliance year from 2017 through 2019 exceeds \$50,000 per ton, the Governing Board has the discretion to convert facilities' Nontradable/Nonusable RTCs to Tradable/Usable RTCs. For RTC transactions occurring in calendar year 2015, the overall program review thresholds in 2015 dollars are \$41,591 per ton of discrete-year NOx RTCs, \$29,946 per ton of discrete-year SOx RTCs, \$623,866 per ton of IYB NOx RTCs, and \$449,184 per ton of IYB SOx RTCs.

RTC Trading Activity Excluding Swaps

Overall Trading Activity

RTC trades include discrete and IYB RTCs traded with prices, discrete and IYB RTC transfers with zero price, and discrete and IYB RTC swap trades. The RTC market activity in calendar year 2015 was comparable to the market activity in calendar year 2015 was comparable to the market activity in calendar year 2015 trading activity—356 total registered trade transactions (335 NOx trades and 21 SOx trades)—was slightly lower than the number of trade transactions in calendar year 2014 (362 total registered trade transactions; 344 NOx trades and 18 SOx trades).

In comparison to calendar year 2014, the value traded in calendar year 2015 was substantially higher (increased by 89%). Excluding swap trades, a total value of almost \$197.1 million was traded in calendar year 2015 (\$193.1 million for NOx and \$4.02 million for SOx)—substantially higher than the total value of \$104.2 million traded in calendar year 2014 (\$102.4 million for NOx and \$1.8 million for SOx). As illustrated in Figure 2-3, 2015 experienced the highest annual value of RTCs traded in RECLAIM since the California energy crisis that happened in 2000-2001. The increase in the total value traded was due to the much higher price for IYB NOx RTCs traded in 2015, likely a result of the on-going NOx allocation reduction discussions that culminated in the Governing Board's adoption of the December 4, 2015 rule amendment. Figure 2-4 summarizes overall trading activity (excluding swaps) in calendar year 2015 by pollutant.

With respect to volume traded (also excluding swap trades), the 3,891 tons of discrete RTCs traded in calendar year 2015 were substantially higher than the 2,811 tons of discrete RTCs traded in calendar year 2014 (increased by 38%). In calendar year 2015, there were 2,396 tons of discrete NOx RTCs and 47 tons of discrete SOx traded with price and 975 tons of discrete NOx and 473 tons of discrete SOx traded without price. In addition, the 1,642 tons of IYB RTCs traded in calendar year 2015 were also much higher than the 965 tons of IYB RTCs traded in 2014 (increased by 70%). There were 939 tons of IYB NOx and 75 tons of IYB SOx traded with price and 295 tons of IYB NOx traded with zero price and 333 tons of IYB SOx traded with zero price. Additional information on the discrete and IYB trading activities, value, and volume are discussed later in this chapter.

There were 83 trades with zero price in calendar year 2015. RTC transfers with zero price generally occur when a seller transfers or escrows RTCs to a broker pending transfer to the purchaser with price, when there is a transfer between facilities under common operator, when a facility is retiring RTCs for a settlement agreement or pursuant to variance conditions, or when there is a transfer between facilities that have gone through a change of operator. Trades with zero price also occur when the trading parties have mutual agreements where one party provides a specific service (*e.g.*, providing steam or other process components) for the second party. In return, the second party will transfer the RTCs necessary to offset emissions generated from the service. In calendar year 2015, the majority of trades with zero price were transfers between facilities under common ownership and facilities that had a change of operator.

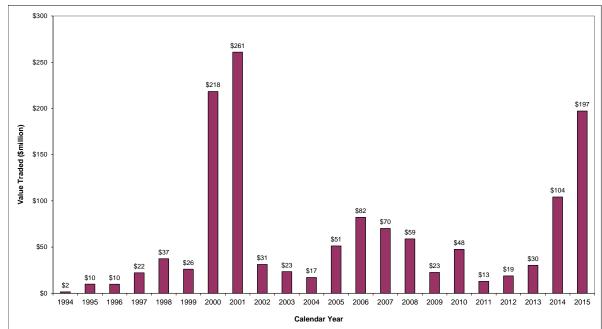


Figure 2-3 Annual Trading Values for NOx and SOx (Excluding Swaps)

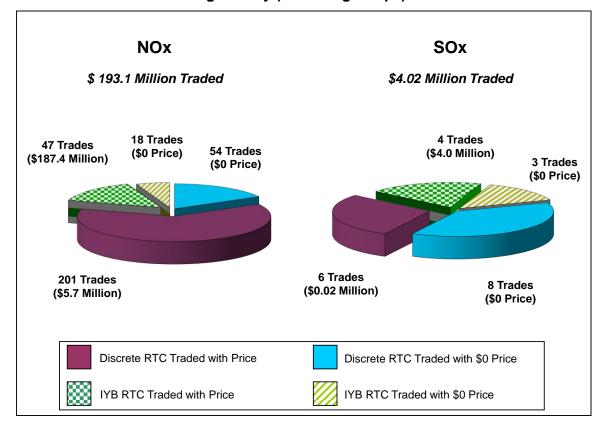


Figure 2-4 Calendar Year 2015 Overall Trading Activity (Excluding Swaps)

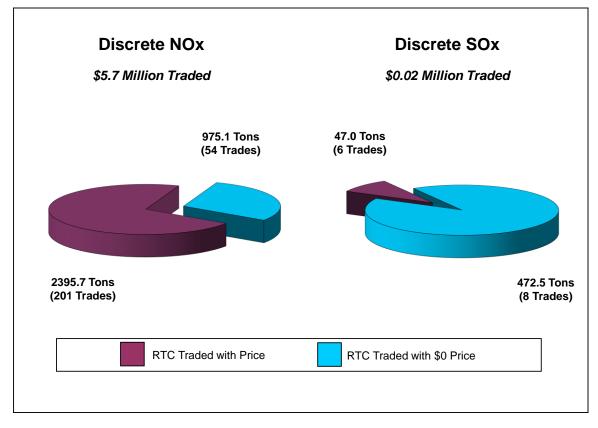
Discrete RTC Trading Activity

In calendar year 2015, there were a total of 255 discrete NOx RTC trades (201 trades with price and 54 trades with zero price) and 14 discrete SOx RTC trades (six trades with price and eight trades with zero price), excluding swap trades. The trading of discrete NOx RTCs included RTCs for Compliance Years 2014 through 2019. The trading of discrete SOx RTCs included RTCs for Compliance Years 2014 and 2015.

Discrete RTC trading values increased in calendar year 2015. The 201 NOx trades with price totaled \$5.7 million in value, up from \$2.7 million in calendar year 2014. The six discrete SOx trades with price totaled \$0.02 million in value, which is equal to the \$0.02 million traded in calendar year 2014.

In calendar year 2015, the overall quantities of discrete NOx and SOx RTCs traded were 3,371 tons and 520 tons, respectively. These quantities were all higher than those traded in calendar year 2014 (2,318 tons of NOx RTCs and 493 tons of SOx RTCs). There were 2,396 tons of discrete NOx traded with price in calendar year 2015, an increase from 1,808 tons of NOx in 2014. However, the 47 tons of discrete SOx RTCs traded in 2015 is lower than the 51 tons of SOx RTCs traded in 2014. In addition, there were 975 tons of discrete NOx RTCs and 473 tons of discrete SOx traded with zero price, an increase from 510 tons of NOx and 442 tons of SOx in 2014. Figure 2-5 illustrates the trading activity of discrete RTCs (excluding swaps) for calendar year 2015.





IYB RTC Trading Activity

In calendar year 2015, there were 65 IYB NOx trades and seven IYB SOx trades. The IYB NOx trades included varying start years through Compliance Year 2020, while the IYB SOx trades had Compliance Years 2015, 2016 and 2017 as start years. Of the 65 IYB NOx trades, 47 trades were with price and 18 trades were with zero price. Of the seven IYB SOx trades, four were with price and three were with zero price.

The 47 IYB NOx trades with price totaling over \$187 million in calendar year 2015 were much higher in value than the 49 trades with price for \$99.7 million in 2014. The four IYB SOx RTC trades with price totaling \$4.0 million in calendar year 2015 were also much higher in value than the four trades and \$1.8 million traded in 2014.

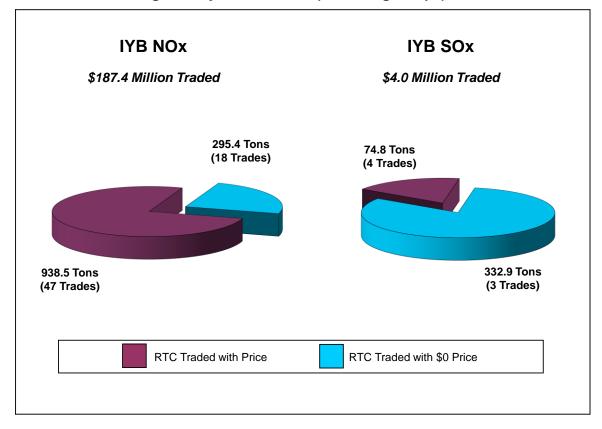
The total quantity of 1,234 tons of IYB NOx traded in calendar year 2015 was higher than the 942 tons traded in calendar year 2014. The quantity traded with price in calendar year 2015 was 939 tons, which is slightly higher than the 902 tons traded with price in calendar year 2014.

The total quantity of 408 tons of IYB SOx traded in calendar year 2015 was much higher than the 23 tons of IYB SOx traded in calendar year 2014. The quantity traded with price in calendar year 2015 was 75 tons, also much higher than the 23 tons of IYB SOx traded with price in calendar year 2014. A significant portion

of the IYB SOx traded with price (55%) was due to the shutdown of a battery recycling plant.

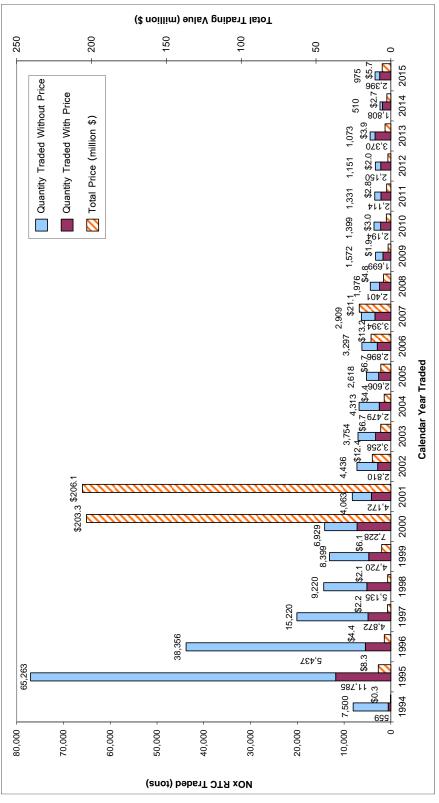
In calendar year 2015, 295 tons of IYB NOx were traded without price compared to only 40 tons in calendar year 2014. Similarly, 333 tons of IYB SOx were traded without price in calendar year 2015, while none were traded without price in calendar year 2014. As described earlier, the majority of these transfers are between facilities under common ownership and facilities that had a change of operator. Figure 2-6 illustrates the calendar year 2015 IYB RTC trading activity excluding swap trades.

Figure 2-6 Calendar Year 2015 Trading Activity for IYB RTCs (Excluding Swaps)



Prior to the amendment of Rule 2007 – Trading Requirements in May 2001, swap information and details of discrete and IYB trades were not required to be provided by trade participants. In compiling data for calendar years 1994 through part of 2001, any trade registration involving IYB RTCs was considered as a single IYB trade and swap trades were assumed to be nonexistent. Trading activity since inception of the RECLAIM program is illustrated in Figures 2-7 through 2-10 (discrete NOx trades, discrete SOx trades, IYB NOx trades, and IYB SOx trades, respectively) based on the trade reporting methodology described earlier in this report.







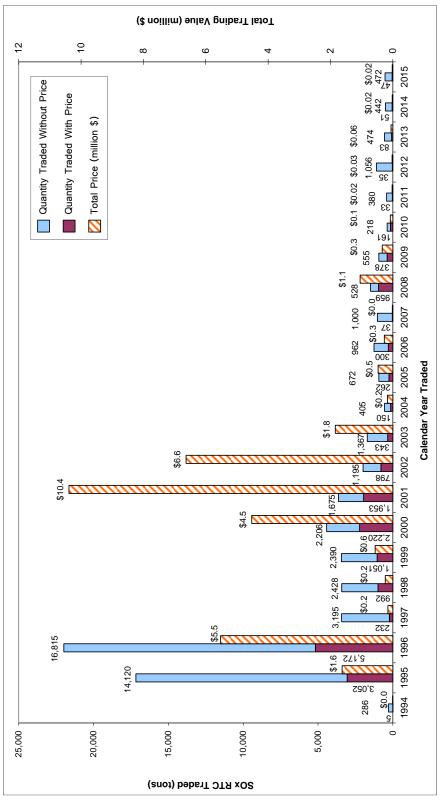


Figure 2-9 IYB NOx RTC Trades (Excluding Swaps)

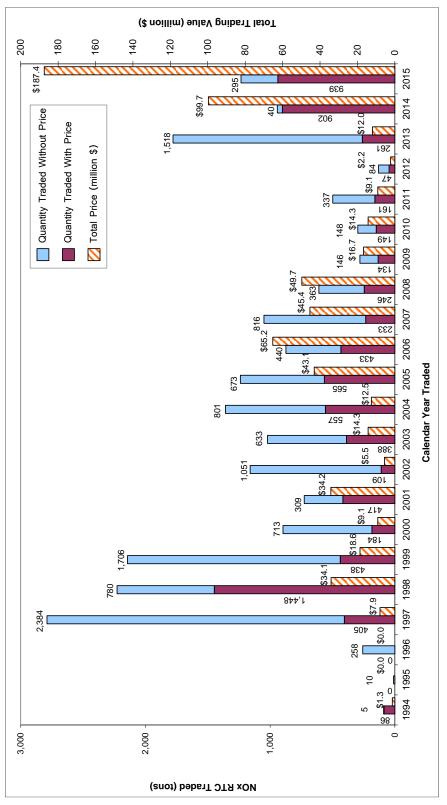
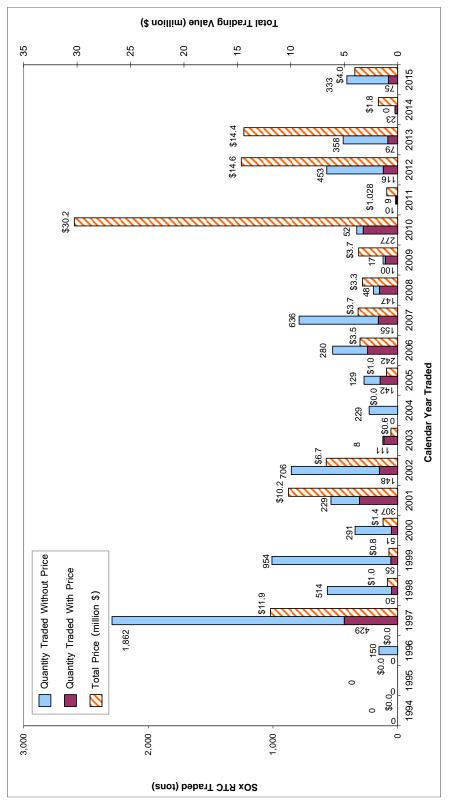


Figure 2-10 IYB SOx RTC Trades (Excluding Swaps)



Swap Trades

In addition to traditional trades of RTCs for a price, RTC swaps also occurred between trading partners. Most of the swap trades were exchanges of RTCs with different zones, cycles, expiration years, and/or pollutants. Some swaps involved a combination of RTCs and cash payment as a premium. There were also swaps of RTCs for ERCs. Trading parties swapping RTCs were required to report the agreed upon price of RTCs for each trade even though, with the exception of the above-described premiums, no money was actually exchanged. Over \$6.8 million in total value was reported from RTCs that were swapped in calendar year 2015, of which four swap trades involved trading IYB NOx RTCs for PM10 ERCs and were collectively valued at a total of \$6.09 million. The swap values are based on the prices reported on the RTC trade registrations. Since RTC swap trades occur when two trading partners exchange RTCs, values reported on both trades involved in the exchange are included in the calculation of the total value reported. However, in cases where commodities other than RTCs are involved in the swap, these commodity values are not included in the above reported total value (e.g., in the case of a swap of NOx RTCs valued at \$10,000 for another set of RTCs valued at \$8,000 together with a premium of \$2,000, the value of such a swap would have been reported at \$18,000 in Table 2-2).

For calendar years that have swap transactions with large values (*e.g.*, 2009) the inclusion of swap transactions in the average trade price calculations would have resulted in calculated annual average prices dominated by swap transactions, and therefore, potentially not representative of market prices actually paid for RTCs. Prices of swap trades are excluded from analysis of average trade prices because the values of the swap trades are solely based upon prices agreed upon between trading partners and do not reflect actual funds transferred. Tables 2-2 and 2-3 present the calendar years 2001 through 2015 RTC swaps for NOx and SOx, respectively.

Total Value (\$ millions)	IYB RTC Swapped with Price (tons)	Discrete RTC Swapped with Price (tons)	Number of Swap Registrations with Price	Total Number of Swap Registrations
\$24.29	6.0	612.2	71	78
\$14.31	64.3	1,701.7	94	94
\$7.70	69.9	1,198.1	64	64
\$3.74	0	1,730.5	90	90
\$3.89	18.7	885.3	53	53
\$7.29	14.8	1,105.9	49	49
\$4.14	0	820.0	43	49
\$8.41	4.5	1,945.8	48	50
\$55.76	394.2	1,188.4	37	42
\$3.73	18.2	928.5	25	31
\$2.00	0	775.5	25	32
\$1.29	0	928.1	36	36
\$2.41	11.6	1,273.5	44	44
\$3.24	28.5	489.6	25	25
\$6.77	31.0	317.0	15	15
	(\$ millions) \$24.29 \$14.31 \$7.70 \$3.74 \$3.89 \$7.29 \$4.14 \$8.41 \$55.76 \$3.73 \$2.00 \$1.29 \$2.41 \$3.24	Iotal Value (\$ millions)Swapped with Price (tons)\$24.296.0\$14.3164.3\$14.3164.3\$7.7069.9\$3.740\$3.8918.7\$7.2914.8\$4.140\$8.414.5\$55.76394.2\$3.7318.2\$2.000\$1.290\$2.4111.6\$3.2428.5	Iotal Value (\$ millions)Swapped with Price (tons)Swapped with Price (tons)\$24.296.0612.2\$14.3164.31,701.7\$7.7069.91,198.1\$3.7401,730.5\$3.8918.7885.3\$7.2914.81,105.9\$4.140820.0\$8.414.51,945.8\$55.76394.21,188.4\$3.7318.2928.5\$2.000775.5\$1.290928.1\$2.4111.61,273.5\$3.2428.5489.6	Iotal Value (\$ millions)Swapped with Price (tons)Swapped with Price (tons)Registrations with Price\$24.296.0612.271\$14.3164.31,701.794\$7.7069.91,198.164\$3.7401,730.590\$3.8918.7885.353\$7.2914.81,105.949\$4.140820.043\$88.414.51,945.848\$55.76394.21,188.437\$3.7318.2928.525\$2.000775.525\$1.290928.136\$2.4111.61,273.544\$3.2428.5489.625

Table 2-2 NOx Registrations Involving Swaps*

* Swaps without price are strictly transfers of RTCs between trading partners and their respective brokers. Information regarding swap trades was not required prior to May 9, 2001.

Table 2-3

SOx Registrations Involving Swaps*

Year	Total Value (\$ millions)	IYB RTC Swapped with Price (tons)	Discrete RTC Swapped with Price (tons)	Number of Swap Registrations with Price	Total Number of Swap Registrations
2001	\$1.53	18.0	240.0	3	4
2002	\$6.11	26.6	408.4	30	30
2003	\$5.88	20.9	656.0	32	32
2004	\$0.39	0	161.8	13	13
2005	\$2.16	43.5	227.8	13	14
2006	\$0.02	0	24.4	2	2
2007	\$0.00	0	0	0	0
2008	\$0.40	0	197.0	5	8
2009	\$3.63	55.3	401.3	9	10
2010	\$6.89	79.4	417.0	16	18
2011	\$0.25	0	228.5	3	4
2012	\$27.01	100.0	7.5	4	4
2013	\$0.33	3.1	5.5	2	2
2014	\$0.01	0.0	14.8	1	1
2015	\$0	0.0	0	0	0

* Swaps without price are strictly transfers of RTCs between trading partners and their respective brokers. Information regarding swap trades was not required prior to May 9, 2001.

RTC Trade Prices

Discrete-Year RTC Prices

In calendar year 2015, the annual average prices for discrete-year NOx RTCs were \$1,039 per ton for Compliance Year 2014, \$1,642 per ton for Compliance Year 2015, \$2,833 per ton for Compliance Year 2016, \$4,020 per ton for Compliance Year 2017, \$6,006 per ton for Compliance Year 2018, and \$8,067 per ton for Compliance Year 2019. The calendar year 2015 annual average prices for discrete-year SOx RTCs were \$483 per ton for Compliance Year 2014, and \$380 per ton for Compliance Year 2015. There was no trading of Compliance Year 2016 and after SOx RTCs in calendar year 2015.

Figures 2-11 and 2-12 present the annual average prices for discrete-year NOx and SOx RTCs during calendar years 2007 through 2015, respectively. Note that prices for a Compliance Year's RTCs may also be shown for the calendar year after those RTCs expired, since the average price for each compliance year is based on sales of both Cycle 1 RTCs expiring in December of that year, as well as Cycle 2 RTCs expiring in June of the following year. Furthermore, Cycle 1 RTCs expiring in December may be traded during the 60-day reconciliation period following the expiration date, which extends into the next calendar year.

Annual average prices in calendar year 2015 for discrete NOx and SOx RTCs for all compliance years remained well below the \$15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by SCAQMD Rule 2015, as well as the \$41,591 per ton of NOx and \$29,946 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code \$39616(f).

Figure 2-11 Annual Average Prices for Discrete-Year NOx RTCs during Calendar Years 2007 through 2015

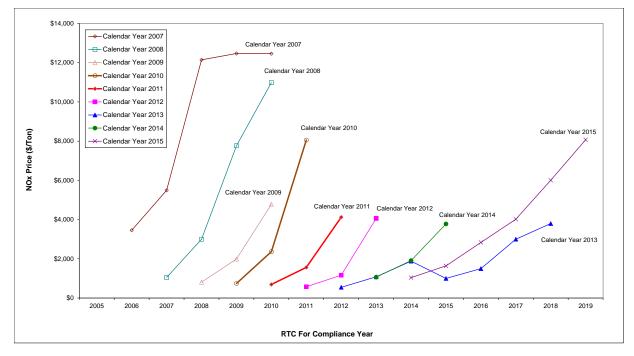
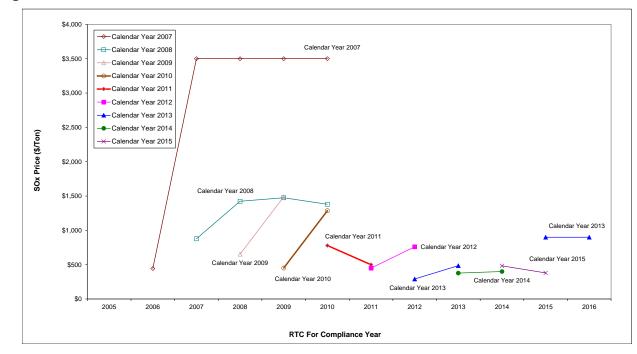


Figure 2-12 Annual Average Prices for Discrete-Year SOx RTCs during Calendar Years 2007 through 2015



Twelve-Month Rolling Average Prices of Compliance Year 2015 NOx RTCs

The January 2005 RECLAIM amendments directed the Executive Officer to calculate the 12-month rolling average price of NOx RTCs ("rolling average price") "for all trades for the current compliance year" excluding "RTC transactions reported at no price." Swap transactions are also excluded from the calculation of rolling average prices.

In the event that the rolling average price exceeds \$15,000 per ton, the Executive Officer is required to report the rolling average price to the Governing Board. If the Governing Board determines that the rolling average price exceeds \$15,000 per ton, SCAQMD is required to review the compliance aspects of the RECLAIM program. In its resolution amending Rule 2002(f) on January 7, 2005, the Governing Board directed the Executive Officer to report the NOx RTC 12-month rolling average price data to the Stationary Source Committee (SSC) at least quarterly. Accordingly, such reports have been prepared by SCAQMD staff and submitted to the SSC on a quarterly basis. To date, the twelve-month rolling average price of current-year NOx RTCs on a monthly basis and report the rolling average prices to the Stationary Source Committee rolling average prices to the Stationary Source Committee rolling average price of current-year NOx RTCs on a monthly basis and report the rolling average prices to the Stationary Source Committee rolling average prices to the S

On December 4, 2015, the Governing Board amended Rule 2002(f)(1)(H) to change the twelve-month rolling average price threshold to \$22,500 per ton for NOx RTCs. In order to have a quicker response trigger, the Governing Board also adopted a three-month rolling average price threshold of \$35,000 per ton commencing on May 1, 2016. If NOx RTC prices exceeded either of these levels, a report to the Governing Board and program review will be required.

As shown in Table 2-4, the twelve-month rolling average prices of Compliance Year 2015 NOx RTCs started decreasing noticeably from August 2015 through the end of the year. Throughout 2015, the twelve-month rolling average prices did not exceed the \$15,000 per ton threshold specified in Rule 2002(f). Therefore, it was not necessary for the Executive Officer to report the rolling average price to the Governing Board or for the Governing Board to require a compliance audit.

Reporting Month	12-Month Period	Average Price (\$/ton)
January 2015	January 2014 through December 2014	\$3,779
February 2015	February 2014 through January 2015	\$3,800
March 2015	March 2014 through February 2015	\$3,800
April 2015	April 2014 through March 2015	\$3,800
May 2015	May 2014 through Apr 2015	\$3,755
June 2015	June 2014 through May 2015	\$3,722
July 2015	July 2014 through June 2015	\$3,625
August 2015	August 2014 through July 2015	\$2,734
September 2015	September 2014 through August 2015	\$2,603
October 2015	October 2014 through September 2015	\$2,600
November 2015	November 2014 through October 2015	\$2,449
December 2015	December 2014 through November 2015	\$1,890
January 2016	January 2015 through December 2015	\$1,642

Table 2-4Twelve-Month Rolling Average Prices of Compliance Year 2015 NOx RTCs

Average Price for NOx RTCs Nearing Expiration

Generally, RTC prices decrease as their expiration dates approach and during the sixty days after their expiration dates during which they can be traded. RTC prices are usually lowest during the 60 day-period following their expiration date during which facilities are allowed to trade and obtain RTCs to cover their emissions. This general trend has been repeated every year since 1994 except for Compliance Years 2000 and 2001 (during the California energy crisis), when NOx RTC prices increased as the expiration dates approached because the power plants' NOx emissions increased significantly, causing a shortage of NOx RTCs. Prices for NOx RTCs that expired in calendar year 2015 followed the general trend of RTC prices declining over the course of the Compliance Year and the sixty-day trading period thereafter.

The bi-monthly average price for these near-expiration NOx RTCs is shown in Figure 2-13 to illustrate the general price trend for these RTCs. The general declining trend of RTC prices nearing and just past expiration indicates that there was an adequate supply to meet RTC demand during the final reconciliation period following the end of the compliance years. A similar analysis is not performed for the price of SOx RTCs nearing expiration because there are not enough SOx trades over the course of the year to yield meaningful data. For calendar year 2015, there were only six discrete SOx trades with price and these prices were flat throughout the year.

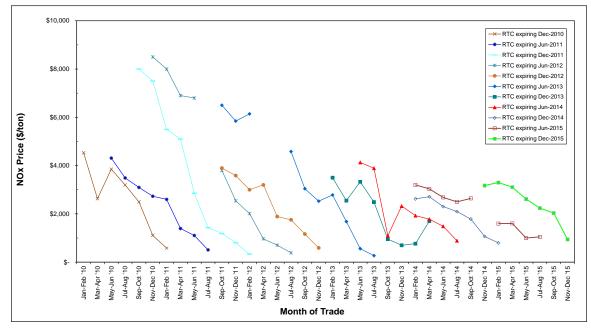
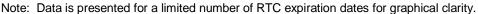


Figure 2-13 Bi-Monthly Average Price for NOx RTCs near Expiration



IYB RTC Prices

The annual average price for IYB NOx RTCs traded in calendar year 2015 was \$199,685 per ton, which is much higher than the annual average price of \$110,509 per ton traded in calendar year 2014. The annual average price for IYB SOx RTCs traded in calendar year 2015 was \$53,665 per ton, which is lower than the \$80,444 per ton traded in calendar year 2014. There were four IYB SOx trades with price totaling 75 tons in 2015, compared to the 22.5 tons traded in 2014. Two investors purchased all the IYB SOx traded with price. Data regarding IYB RTCs traded with price (excluding swap trades) for NOx and SOx RTCs and their annual average prices since 1994 are summarized in Tables 2-5 and 2-6, respectively. In calendar year 2015, the annual average IYB RTC prices did not exceed the \$623,866 per ton of NOx RTCs or the \$449,184 per ton of SOx RTCs program review thresholds established by the Governing Board for IYB RTCs pursuant to California Health and Safety Code §39616(f).

The December 4, 2015 Rule 2002 amendment requires staff to prepare the twelve-month rolling average price report for IYB NOx RTCs. Commencing in 2019, if the twelve-month rolling average IYB NOx price falls below \$200,000 per ton, staff would report this finding to the Governing Board.

Table 2-5 IYB NOx Pricing (Excluding Swaps)

Calendar Year	Total Reported Value (\$ millions)	IYB RTC Traded with Price (tons)	Number of IYB Registrations With Price	Average Price (\$/ton)
1994*	\$1.3	85.7	1	\$15,623
1995*	\$0.0	0	0	N/A
1996*	\$0.0	0	0	N/A
1997*	\$7.9	404.6	9	\$19,602
1998*	\$34.1	1,447.6	23	\$23,534
1999*	\$18.6	438.3	19	\$42,437
2000*	\$9.1	184.2	15	\$49,340
2001*	\$34.2	416.9	25	\$82,013
2002	\$5.5	109.5	31	\$50,686
2003	\$14.3	388.3	28	\$36,797
2004	\$12.5	557.0	52	\$22,481
2005	\$43.1	565.3	71	\$76,197
2006	\$65.2	432.9	50	\$150,665
2007	\$45.4	233.5	25	\$194,369
2008	\$49.7	245.6	27	\$202,402
2009	\$16.7	134.2	14	\$124,576
2010	\$14.3	149.0	13	\$95,761
2011	\$9.1	160.7	29	\$56,708
2012	\$2.2	46.6	13	\$48,146
2013	\$12.0	260.9	17	\$45,914
2014	\$99.7	902.2	49	\$110,509
2015	\$187.4	938.5	47	\$199,685

* No information regarding swap trades was reported until May 9, 2001.

Table 2-6IYB SOx Pricing (Excluding Swaps)

Calendar Year	Total Reported Value (\$ millions)	IYB RTC Traded with Price (tons)	Number of IYB Registrations With Price	Average Price (\$/ton)
1994*	\$0.0	0	0	N/A
1995*	\$0.0	0	0	N/A
1996*	\$0.0	0	0	N/A
1997*	\$11.9	429.2	7	\$27,738
1998*	\$1.0	50.0	1	\$19,360
1999*	\$0.8	55.0	3	\$14,946
2000*	\$1.4	50.6	5	\$27,028
2001*	\$10.2	306.8	8	\$33,288
2002	\$6.7	147.5	5	\$45,343
2003	\$0.6	110.9	1	\$5,680
2004	\$0.0	0.0	0	N/A
2005	\$1.0	141.5	3	\$7,409
2006	\$3.5	241.7	12	\$14,585
2007	\$3.7	155.2	5	\$23,848
2008	\$3.3	146.8	5	\$22,479
2009	\$3.7	100.0	4	\$36,550
2010	\$30.2	277.0	10	\$109,219
2011	\$1.03	10.0	2	\$102,366
2012	\$14.6	116.2	4	\$125,860
2013	\$14.4	79.2	4	\$181,653
2014	\$1.8	22.5	4	\$80,444
2015	\$4.0	74.8	4	\$53,665

* No information regarding swap trades was reported until May 9, 2001.

Other Types of RTC Transactions and Uses

Another type of RTC trade, besides traditional trading and swapping activities, is a trade involving the contingent right (option) to purchase RTCs. In those transactions, one party pays a premium for the contingent right (option) to purchase RTCs owned by the other party at a pre-determined price within a certain time period. Until RTCs are transferred from seller to buyer, prices for options are not reported, because the seller is not paid for the actual RTCs, but only for the right to purchase the RTCs at a future date. These rights may or may not actually be exercised. RTC traders are obligated to report options to SCAQMD within five business days of reaching an agreement. These reports are posted on SCAQMD's website. There were two reported trades involving the contingent right to buy or sell RTCs in calendar year 2015.

As in prior years, RTCs were used in other programs during calendar year 2015. Six facilities surrendered a total of 67.3 tons of NOx RTCs and 0.2 tons of SOx RTCs. Nineteen tons of the NOx RTCs and all the SOx RTCs were retired to satisfy variance conditions. Two facilities surrendered 48.3 tons of NOx RTCs as part of the California Environmental Quality Act (CEQA) requirement to mitigate the emissions impact from construction projects. These consisted of discrete year RTCs for Compliance Years 2014, 2015, and 2016.

Market Participants

RECLAIM market participants have traditionally included RECLAIM facilities, brokers, commodity traders, and private investors. Starting in calendar year 2004, mutual funds joined the traditional participants in RTC trades. Market participation expanded further in 2006, when foreign investors started participating in RTC trades. However, foreign investors have not participated in any RTC trades since calendar year 2008 and foreign investors do not hold any current or future RTCs at this time.

RECLAIM facilities are the primary users of RTCs and they hold the majority of RTCs as allocations. They usually sell their surplus RTCs by the end of the compliance year or when they have a long-term decrease in emissions. Brokers match buyers and sellers, and usually do not purchase or own RTCs. Commodity traders and private investors actually invest in and own RTCs in order to seek profits by trading them. They do not need RTCs to offset or reconcile any emissions. For purposes of discussion in this report, "investors" include all parties who hold RTCs other than RECLAIM facility permit holders and brokers. Brokers typically do not actually purchase RTCs but facilitate transactions.

Investor Participation

In 2015 investors were actively involved in 147 of the 201 discrete NOx RTC trades with price, two of the six discrete SOx RTC trades with price, and 44 of the 47 IYB NOx trades with price. Investors were also involved in all of the four IYB SOx trades with price.

Investors' involvement in discrete NOx and SOx trades registered with price in calendar year 2015 is illustrated in Figures 2-14 and 2-15. Figure 2-14 is based on total value of discrete NOx and SOx RTCs traded, and shows that investors were involved in 91% and 37%, respectively, of the discrete NOx and SOx trades reported by value. Figure 2-15 is based on volume of discrete RTCs traded with price and shows that investors were involved in 79% and 31% of the discrete NOx and SOx trades by volume, respectively. Figures 2-16 and 2-17 provide similar data for IYB NOx and SOx trades, and show that investors were involved in 92% of IYB NOx trades on a reported value basis, and 91% of IYB NOx trades on the basis of the volume traded with price. Investors were involved in all IYB SOx trades with price in calendar year 2015.

Figure 2-14



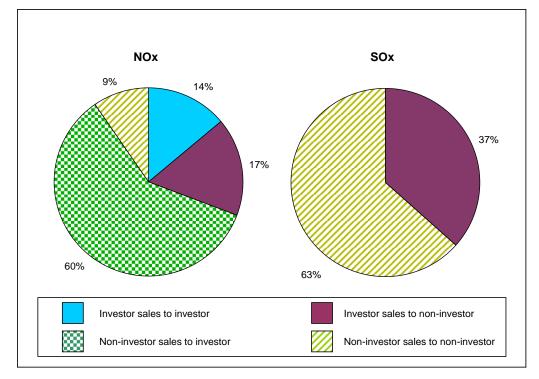


Figure 2-15 Calendar Year 2015 Investor-Involved Discrete NOx and SOx Trades Based on Volume Traded with Price

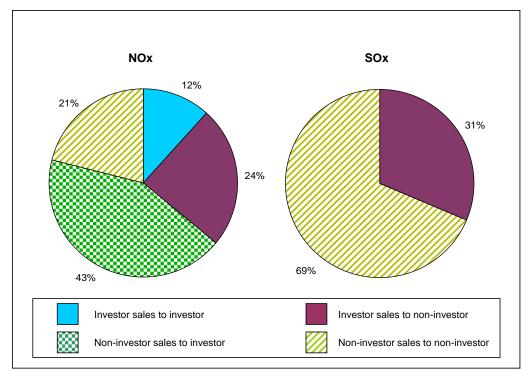


Figure 2-16

Calendar Year 2015 Investor-Involved IYB NOx and SOx Trades Based on Value Traded

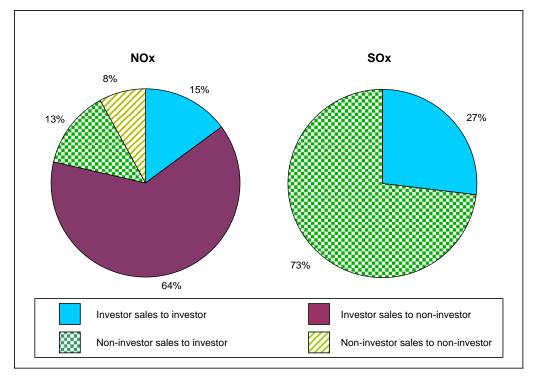
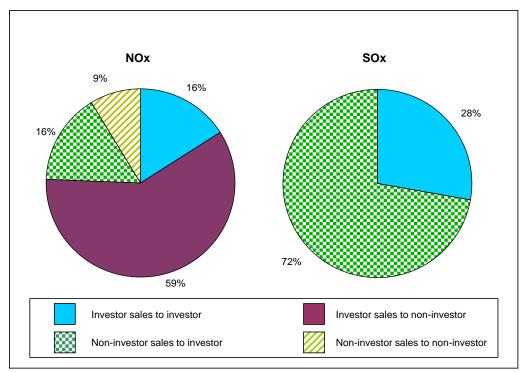


Figure 2-17 Calendar Year 2015 Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price



As of the end of calendar year 2015, investors' holding of IYB NOx RTCs had decreased to 1.9% compared to 4.6% at the end of calendar year 2014. Mutual fund investors are no longer holders of IYB NOx RTCs, down from a high of 3.3% at the end of calendar year 2011 and 1.4% at the end of calendar year 2014. Investors' holding of IYB SOx RTCs increased to 3.3% at the end of calendar year 2015 from 0.9% at the end of calendar year 2014. No IYB SOx RTCs are currently held by mutual fund investors.

The available supply of IYB RTCs are generally from facilities that have permanently reduced emissions through the installation of control equipment, the modification or replacement of old equipment, or equipment and/or facility shutdowns. There were four RECLAIM facilities that shut down during Compliance Year 2014. These four facilities all participated in the NOx RECLAIM program and held a total of 179.0 tons of IYB NOx RTCs and the one facility also participating in the SOx RECLAIM program held a total of 1.7 tons of IYB NOx RTCs and no IYB SOx RTCs. All IYB NOx and SOx RTCs sales from these shutdowns occurred prior to calendar year 2015.

Investor Impacts on RTC Market

Theoretically, the role of investors in this market is to provide capital for installing air pollution control equipment that costs less than the market value of credits. In addition, investors can also improve price competitiveness. This market theory may not fully apply to RECLAIM due to the uniqueness of the program because RECLAIM facility operators have no substitute for RTCs, and short of curtailing operations, pollution controls cannot be implemented within a short time period. That is, there is no alternative source of credits available to RECLAIM facilities when RTC prices increase (they do not have the option to switch to another source of credits when RTCs become expensive). Therefore, RECLAIM facility operators may be at the mercy of owners of surplus or investor-owned RTCs in the short term, particularly during times of rapid price increases, as evidenced in 2000 and 2001 during the California energy crisis.

Generally, RECLAIM facilities hold back additional RTC's for each year as a compliance margin to ensure that they do not inadvertently find themselves exceeding their allocations (failing to reconcile by securing sufficient RTCs to cover their emissions) if their reported emissions increase as the result of any problems or errors discovered by SCAQMD staff during annual facility audits. Facilities have indicated to staff in the past that this compliance margin is approximately 10% of their emissions. For Compliance Year 2014, the total RECLAIM NOx emissions were 7,447 tons. If the future total NOx emissions increased to the Compliance Year 2007 level of 8,796 tons (as illustrated in Figure 7-1), the NOx RTC surplus would be only 903 tons (9% of allocation), which is almost in line with the 10% compliance margin reportedly held by RECLAIM facilities.

To put investors' holdings in context, at the end of calendar year 2015 the aggregate investors' holdings are 1.9% of IYB NOx RTCs. While it can be argued that the holding of IYB NOx RTCs by investors as a group is small relative to the total supply of IYB NOx RTCs, and given the recent rule

amendment that reduced allocations by 45.3% to be achieved in future years, there is no clear basis to estimate the level of IYB RTCs available for sale by non-investors. IYB RTCs represent a critical aspect of the program because these streams of RTCs are sought after to support growth at new or existing facilities. Active facilities are less likely to sell their future year RTCs as IYB. As a result, new RECLAIM facilities or facilities with modifications resulting in emissions increases are potentially at the mercy of investors holding IYB RTCs. Investors have the ability to purchase RTCs at any time so there is the potential for investors' holdings of IYB NOx RTCs to increase in the future.

On the other hand, overall emissions in RECLAIM will certainly change and can be affected by various factors including installation of more emission control equipment, production changes, inclusion of additional facilities into the RECLAIM universe, and shifts in industry sectors and in the economy, in general. Staff anticipates that there are two primary mechanisms that drive a facility to implement additional control technologies: Implementation of Best Available Control Technology (BACT) when existing sources reach the end of their useful lives and are replaced, and demand for RTCs approaching the supply driving up RTC prices and incentivizing the installation of emission controls. The first of these mechanisms will occur gradually over time and the second is likely to be significant when RECLAIM facilities increase production or the supply of RTCs decreases as a result of amendments to Rule 2002 implementing BARCT as discussed in Chapter 3. The first iteration of amending Rule 2002 to reduce the NOx RTC supply to reflect changes in BARCT was adopted by the Governing Board in January 2005 and phased in from Compliance Year 2007 through Compliance Year 2011. The first iteration for SOx (adopted November 2010 with phased implementation commencing in Compliance Year 2013 and full implementation starting with Compliance Year 2018) is currently underway. SOx RECLAIM facilities had ample notice and have been able to keep aggregate SOx emissions below aggregate allocations without significant price increases in Compliance Years 2013 and 2014. On December 4, 2015, the Governing Board amended Rule 2002 to implement BARCT by reducing the NOx RTC supply for Compliance Year 2016 and after, as further discussed in Chapter 3. SCAQMD is working with stakeholders to develop proposed amendments to Regulation XX involving the surrender of RTCs held by RECLAIM facilities when they shutdown equipment or the whole facility to bring this aspect of RECLAIM more in line with non-RECLAIM New Source Review. The December 2015 amendments and the current rule development effort are expected to put pressure on RECLAIM facility operators to reduce emissions so as to keep them below their RTC holdings. It is too soon to tell how the market will respond to these amendments, but if adequate emissions controls are not implemented in a timely manner there is the potential for a seller's market for NOx RTCs to develop, which would make RTCs held by investors increasingly important to the market, as described above. SCAQMD staff will continue to monitor market activity and prices throughout the implementation and will report back to the Governing Board regularly.

The significance of investors' holdings will certainly depend on the ability of RECLAIM facilities to generate adequate emissions reductions in time to dampen the effect of a sellers' market that may exist if demand surges in a short period of time, as it did during the California energy crisis of 2000-2001. Proposals to generate emission reduction credits from sources outside of RECLAIM (*i.e.*, mobile and area sources) can also dampen sudden price increases. SCAQMD

staff continues to monitor investor participation in the market to ensure that such participation does not adversely impact the RECLAIM program.

CHAPTER 3 EMISSION REDUCTIONS ACHIEVED

Summary

For Compliance Year 2014, aggregate NOx emissions were below total allocations by 23% and aggregate SOx emissions were below total allocations by 23%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2014. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports. Therefore, based on audited emissions, RECLAIM achieved its targeted emission reductions for Compliance Year 2014. With respect to the Rule 2015 backstop provisions, Compliance Year 2014 aggregate NOx and SOx emissions were both well below aggregate allocations and, as such, did not trigger the requirement to review the RECLAIM program.

Background

One of the primary objectives of the annual RECLAIM program audits is to assess whether RECLAIM is achieving its targeted emission reductions. Those targeted emission reductions are embodied in the annual allocations issued to RECLAIM facilities. In particular, the annual allocations reflect required emission reductions initially from the subsumed command-and-control rules and control measures, as well as from subsequent reductions in allocations as a result of BARCT implementation. In January 2005 and December 2015, the Board adopted amendments to Rule 2002 to further reduce aggregate RECLAIM NOx allocations through implementation of the latest BARCT. The 2005 amendments resulted in cumulative NOx allocation reductions of 22.5% (2,811 tons/year) from all RECLAIM facilities by Compliance Year 2011, with the biggest single-year reduction of 11.7% in Compliance Year 2007. The 2015 amendments will reduce NOx allocations by 45.3% (4,380 tons per day) by Compliance Year 2022. The reductions are phased-in from Compliance Year 2016 through Compliance Year 2022.

The Board also amended Rule 2002 in November 2010 to implement changes in BARCT for SOx. Specifically, the November 2010 amendments called for certain facilities' RECLAIM SOx allocations to be adjusted to achieve a 48% (2,081 tons/year) overall reduction, with the reductions phased-in from Compliance Year 2013 through Compliance Year 2019. About 1,460 tons/year (approximately 70% of the scheduled reduction) of SOx allocations were reduced by Compliance Year 2014.

Emissions Audit Process

Since the inception of the RECLAIM program, SCAQMD staff has conducted annual program audits of the emissions data submitted by RECLAIM facilities to ensure the integrity and reliability of RECLAIM emission data. The process includes reviews of APEP reports submitted by RECLAIM facilities and audits of field records and emission calculations. The audit process is described in further detail in Chapter 5 – Compliance.

SCAQMD staff adjusts the APEP-reported emissions based on audit results, as necessary. Whenever SCAQMD staff finds discrepancies, they discuss the findings with the facility operators and provide the operators an opportunity to review changes resulting from facility audits and to present additional data or information in support of the data stated in their APEP reports.

This rigorous audit process, although resource intensive, reinforces RECLAIM's emissions monitoring and reporting requirements and enhances the validity and reliability of the final emissions data. The audited emissions are used to determine if a facility complied with its allocations. The most recent five compliance years' audited NOx emissions for each facility are posted on SCAQMD's web page after the audits are completed. All emissions data presented in this annual RECLAIM audit report are compiled from audited facility emissions.

Emission Trends and Analysis

RECLAIM achieves its emission reduction goals on an aggregate basis by ensuring that annual emissions are below total RTCs. It is important to understand that the RECLAIM program is successful at achieving these emission reduction goals even when some individual RECLAIM facilities exceed their RTC account balances, provided aggregate RECLAIM emissions do not exceed aggregate RTCs issued. Therefore, aggregate audited NOx or SOx emissions from all RECLAIM sources are the basis for determining whether the programmatic emission reduction goals for that emittant are met each year.

Since the last annual report, one facility's previous year audit was re-opened based on reassessment of the facility's records and all information available to the SCAQMD. The re-opened audit affected the facility's NOx emissions reported for Compliance Year 2013. Table 3-1 summarizes the change to the audited emissions for the impacted facility. This audit change caused a decrease of less than 0.002% in the overall audited RECLAIM NOx emissions for Compliance Year 2013.

Table 3-1Summary of Re-Opened Audits

Compliance Year	Original Audited NOx Emissions (Ibs)	Updated Audited NOx Emissions (Ibs)	Change in Audited NOx Emissions (Ibs)	% Change	% Change in RECLAIM NOx Emissions	Number of Facilities Involved
2013	11,618	11,353	-265	-2.3%	-0.002%	1

Table 3-2 and Figure 3-1 show aggregate audited NOx emissions for Compliance Years 1994 through 2014. Programmatically, there were excess NOx RTCs remaining after accounting for audited NOx emissions for every compliance year since 1994, except for Compliance Year 2000 when NOx emissions exceeded the total allocations due to the California energy crisis. Since Compliance Year 2007, the first year of the programmatic reduction in RECLAIM NOx allocations that was adopted by the Governing Board as part of the January 2005 rule amendments, the unused NOx RTCs have been at least 20 percent of the aggregate allocations. Specifically, Compliance Year 2014 NOx emissions were below total allocations by 23%. Aggregate annual NOx emissions have remained relatively level since a large drop in Compliance Year 2009.

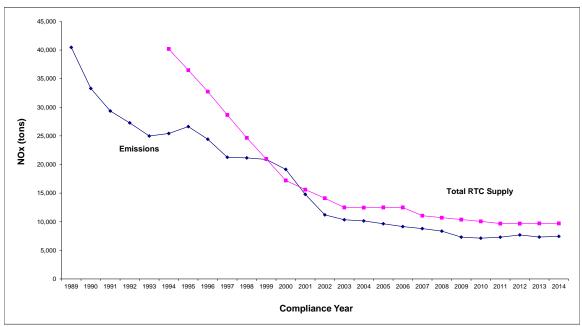
Compliance Year	Audited Annual NOx Emissions ¹ (tons)	Audited Annual NOx Emissions Change from 1994 (%)	Total NOx RTCs ² (tons)	Unused NOx RTCs (tons)	Unused NOx RTCs (%)
1994	25,420	0%	40,186	14,766	37%
1995	26,632	4.8%	36,484	9,852	27%
1996	24,414	-4.0%	32,742	8,328	25%
1997	21,258	-16%	28,657	7,399	26%
1998	21,158	-17%	24,651	3,493	14%
1999	20,889	-18%	20,968	79	0.38%
2000	19,148	-25%	17,208	-1,940	-11%
2001	14,779	-42%	15,617	838	5.4%
2002	11,201	-56%	14,111	2,910	21%
2003	10,342	-59%	12,485	2,143	17%
2004	10,134	-60%	12,477	2,343	19%
2005	9,642	-62%	12,484	2,842	23%
2006	9,152	-64%	12,486	3,334	27%
2007	8,796	-65%	11,046	2,250	20%
2008	8,349	-67%	10,705	2,356	22%
2009	7,306	-71%	10,377	3,071	30%
2010	7,121	-72%	10,053	2,932	29%
2011	7,302	-71%	9,690	2,388	25%
2012	7,691	-70%	9,689	1,998	21%
2013	7,326	-71%	9,699	2,373	24%
2014	7,447	-71%	9,699	2,252	23%

Table 3-2Annual NOx Emissions for Compliance Years 1994 through 2014

¹ The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.

² Total RTCs = Allocated RTCs + RTCs from ERC conversion.

Figure 3-1 NOx Emissions and Available RTCs



Similar to Table 3-2 and Figure 3-1 for NOx, Table 3-3 presents aggregate annual SOx emissions data for each compliance year based on audited emissions, and Figure 3-2 compares these audited aggregate annual SOx emissions with the aggregate annual SOx RTC supply. As shown in Table 3-3 and Figure 3-2, RECLAIM facilities have not exceeded their SOx allocations on an aggregate basis in any compliance year since program inception. For Compliance Year 2014, SOx emissions were below total allocations by 23%. The unused SOx RTCs from Compliance Year 2008 and on has remained in excess of 20%. The data indicates that RECLAIM met its programmatic SOx emission reduction goals and demonstrated equivalency in SOx emission reductions compared to the subsumed command-and-control rules and control measures. Based on audited emission data, annual SOx emissions increased by 110 tons (5%) in Compliance Year 2014 compared to SOx emissions in Compliance Year 2013.

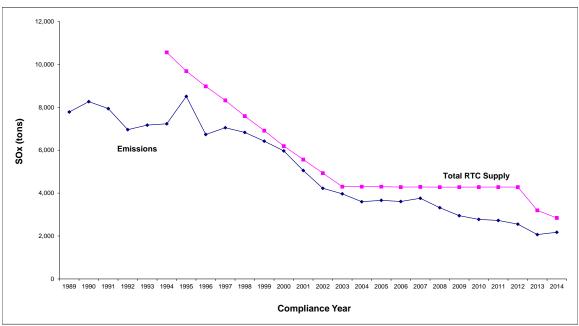
Table 3-3
Annual SOx Emissions for Compliance Years 1994 through 2014

Compliance Year	Audited Annual SOx Emissions ¹ (tons)	Audited Annual SOx Emissions Change from 1994 (%)	Total SOx RTCs ² (tons)	Unused SOx RTCs (tons)	Unused SOx RTCs (%)
1994	7,230	0%	10,336	3,106	30%
1995	8,508	18%	9,685	1,177	12%
1996	6,731	-6.9%	8,976	2,245	25%
1997	7,048	-2.5%	8,317	1,269	15%
1998	6,829	-5.5%	7,592	763	10%
1999	6,420	-11%	6,911	491	7.1%
2000	5,966	-17%	6,194	228	3.7%
2001	5,056	-30%	5,567	511	9.2%
2002	4,223	-42%	4,932	709	14%
2003	3,968	-45%	4,299	331	7.7%
2004	3,597	-50%	4,299	702	16%
2005	3,663	-49%	4,300	637	15%
2006	3,610	-50%	4,282	672	16%
2007	3,759	-48%	4,286	527	12%
2008	3,319	-54%	4,280	961	22%
2009	2,946	-59%	4,280	1,334	31%
2010	2,775	-62%	4,282	1,507	35%
2011	2,727	-62%	4,283	1,556	36%
2012	2,552	-65%	4,283	1,731	40%
2013	2,066	-71%	3,198	1,132	35%
2014	2,176	-70%	2,839	663	23%

¹ The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.

² Total RTCs = Allocated RTCs + RTCs from ERC conversion.

Figure 3-2 SOx Emissions and Available RTCs



Comparison to Command-and-Control Rules

RECLAIM subsumed a number of command-and-control rules¹ and sought to achieve reductions equivalent to these subsumed rules that continue to apply to non-RECLAIM facilities. RECLAIM facilities are exempt from the subsumed rules' requirements that apply to SOx or NOx emissions once the facilities comply with the applicable monitoring requirements of Rules 2011 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions or 2012 – Requirements for Monitoring, Reporting, Report

The only rule subsumed by RECLAIM and amended during Compliance Year 2014, was Rule 1325 – Federal PM2.5 New Source Review Program. Amended on December 5, 2014, this rule incorporated by reference federal requirements that are applicable to major polluting facilities, defined by rule as sources with actual emissions of, or the potential to emit, 100 tons per year or more of PM2.5 or its precursors. Amended Rule 1325 incorporated administrative changes to definitions, provisions, and exclusions in response to comments received from the U.S. EPA regarding SIP approvability of the rule. Specifically, these requirements addressed the definition of major source, significant emissions rate, offset ratios, the applicability requirements of Lowest Achievable Emission Rate (LAER), facility compliance, offsets, and the control of PM2.5 precursors. Typographical corrections and other minor clarifications were also included.

These amendments to Rule 1325 were administrative in nature and did not result in any limitations on NOx or SOx sources at non-RECLAIM facilities. And since

¹ See Tables 1 and 2 of Rule 2001.

Rule 2001 only exempts those provisions in identified rules applicable to NOx and SOx emissions at RECLAIM facilities, the recent amendments to Rule 1325 did not result in disproportionate impacts between RECLAIM and non-RECLAIM sources.

Rule 1153.1 – Emissions of Oxides of Nitrogen from Commercial Ovens was adopted on November 7, 2014 and contained a specific exemption to exclude RECLAIM NOx sources from its applicability. This rule applies to equipment such as food ovens, roasters, and smokehouse ovens with new NOx emissions limits while phasing in compliance based on a 20 year equipment life, and incorporating an 800 ppm carbon monoxide emission limit. Rule 1153.1 is the BARCT rule for this group of equipment under the traditional command and control approach. Under RECLAIM, sources are not subject to source-specific emission limits but are bound by the programmatic goals as specified by the Allocations. Equivalency to command and control is evaluated and implemented as part of the BARCT review process on a programmatic basis (*e.g.*, the three BARCT reviews that resulted in reductions of RECLAIM NOx and SOx allocations).

Other rules amended or adopted during Compliance Year 2014, but not subsumed by RECLAIM include Rule 2449 – Control of Oxides of Nitrogen Emissions from Off-Road Diesel Vehicles, Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces, Regulation IX – Standards of Performance for New Stationary Sources (NSPS), and Regulation X – National Emission Standards for Hazardous Air Pollutants (NESHAPS).

In May 2008, the Governing Board adopted Rule 2449 – Control of Oxides of Nitrogen Emissions from Off-Road Diesel Vehicles, implementing the Surplus Off-Road Opt-In for NOx (SOON) provisions of the State In-Use Off-Road Diesel Vehicle Regulation, which allow air districts to opt-in to the SOON Program to achieve additional NOx reductions from off-road diesel vehicles. On December 14, 2011, CARB amended the In-Use Off-Road Diesel Vehicle Regulation and removed Section 2449.2 of Title 13 of the California Code of Regulations (CCR). As part of that action, CARB renumbered the SOON Provision Section from 2449.3 to Section 2449.2. As a result, on July 11, 2014, Rule 2449 was amended to revise the reference to the SOON provisions provided in the In-Use Off-Road Diesel Vehicle Regulation 2449.2 of Title 13 of the California to Section 2449.2 of Title 13 of the SOON provisions provided in the In-Use Off-Road Diesel Vehicle Regulation from Section 2449.3 to Section 2449.2 of Title 13 of the SOON provisions provided in the In-Use Off-Road Diesel Vehicle Regulation from Section 2449.3 to Section 2449.2 of Title 13 of the California Code of Regulation 2449.2 of Title 13 of the California Code of Regulations.

On September 5, 2014, Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces was amended. The purpose for amending Rule 1111 was to delay the compliance date for condensing (high efficiency) furnaces until April 1, 2015, in order to provide manufacturers additional time for testing new furnace designs and submitting and receiving approval of alternate compliance plans for selling non-compliant condensing furnaces. Additionally, the amendment provided for a mitigation fee-based compliance option to allow up to three years' delay for residential furnace manufacturers that require additional time to produce furnaces that meet the 14 ng/Joule emission limit. The mitigation fee will be used to mitigate the air emissions impacts of the delay.

On April 3, 2015, Regulations IX – Standards of Performance for New Stationary Sources (NSPS) and X – National Emission Standards for Hazardous Air

Pollutants (NESHAPS) were amended to incorporate new or amended federal standards that had been enacted by U.S. EPA for stationary sources. Historically, the Governing Board adopted NSPS (40 CFR 60) and NESHAPS (40 CFR 61) into Regulations IX and X, by reference, to provide stationary sources with a single source of information for determining which federal and local requirements apply to their specific operations. Actions by U.S. EPA, primarily from July 1, 2011 to December 31, 2014, included new performance standards for certain oil and gas operations not covered by previous EPA regulation as well as amendments to previous provisions of twelve NSPS standards and two NESHAPS standards. The amendments to Regulations IX and X incorporated these U.S. EPA NSPS and NESHAPS actions, respectively, into SCAQMD's regulations.

In contrast to Rule 1325 and 1153.1, Rules 2449, 1111, and Regulations IX and X, were not subsumed under RECLAIM and contained no exemptions from their applicability for RECLAIM NOx or SOx sources. Since the requirements of these amended rules apply equally to both RECLAIM and non-RECLAIM facilities, there are no differential impacts in emissions when comparing the applicability of amended rule requirements to NOx and SOx sources under RECLAIM with NOx and SOx sources of non-RECLAIM facilities. Consequently, amendments to rules during Compliance Year 2014, both subsumed by RECLAIM and rules not subsumed by RECLAIM, did not result in any disparate impacts between NOx and SOx sources at RECLAIM and NOx and SOx sources at non-RECLAIM facilities.

Program Amendments

The rule amendment process was initiated in 2012 and continued through Compliance Year 2014 to implement the 2012 AQMP Control Measure CMB-01, which seeks to comply with California Health and Safety Code §40440 in regards to implementation of BARCT and to bring the Basin into attainment with the federal 24-hour PM2.5 standard by 2019 and the federal ozone ambient air quality standards by 2023 and 2031. This effort culminated in a staff proposal to amend the RECLAIM Program which was presented to the Governing Board on December 4, 2015.

The rule amendment process was one of the most comprehensive rule amendment efforts. The process took more than three years and included five briefings for the Stationary Source Committee, 14 Working Group meetings, multiple meetings with various stake holders and air pollution control manufacturers, and input from two engineering consultants. Feasible BARCT identified for the refinery sector included fluid catalytic cracking units, boiler or heaters greater than 40 mmbtu/hr, gas turbines, coke calciners, and sulfur recovery and tail gas incinerators. For the non-refinery sector, new BARCT levels were proposed for container glass melting furnaces, cement kilns, sodium silicate furnaces, metal melting furnaces greater than 150 mmbtu/hr, and gas turbines and ICEs not located on the outer continental shelf. The staff proposal would have resulted in a 14 tons per day of NOx emission reductions in the RTC supply by Compliance Year 2022 with a schedule of incremental reductions starting from Compliance Year 2016.

On December 4, 2015, the Governing Board voted to adopt a reduction of 12 tons per day and with an incremental reduction schedule of 2 tons per day in

2016, 0 tons per day in 2017, 1 ton per day in 2018, 1 ton per day in 2019, 2 tons per day in 2020, 2 tons per day in 2021, and 4 tons per day in 2022. Other program modifications included

- Three different groups of RTC holders with different rates of reductions the first group included major refineries and RTC investors, the second group included the balance of the largest NOx RTC holders representing 90% of the RTC supply (*i.e.*, all NOx RTC holders were sorted by the amount of IYB NOx RTCs held from largest holdings to smallest, and the second group was formed by moving down the list and including all those not in the first group until 90% of the IYB supply was in the first and second group), and the third group included the remaining RTC holders. RTC holdings are reduced by 56.3% for the first group, 41.7% for the second group, and zero percent for the third group;
- A Regional NSR Holding Account for certain electricity generating facilities (EGFs) to hold a portion of the reduced RTCs from these facilities. The specified EGFs may apply their portion of the reduced RTCs toward their hold requirements as imposed by Rule 2005 – New Source Review for RECLAIM;
- Provisions to allow use of RTCs in the Regional NSR Holding Account by any EGF during a Governor-declared State of Emergency related to electricity demand or power grid instability within the SCAQMD jurisdictional boundaries. Any EGF seeking such access to the Regional NSR Holding Account will have to demonstrate that it qualifies pursuant to Rule 2002(f)(4). Available RTCs from this account will be distributed in proportion to the amount requested to qualified participants until the supply is exhausted. Within 60 days of the end of the quarter in which a State of Emergency was declared by the Governor, the Executive Officer is to report to the Governing Board on the quantity of RTCs distributed from the Regional NSR Holding Account, any adverse impacts on the RECLAIM program, and any changes to help correct these impacts;
- Provisions for re-activating an incremental portion of the reduced RTCs, which are designated as Non-Tradable/Non-Usable RTCs, in specific cases. The Governing Board may decide on such re-activation if the three-month rolling average price for current compliance year NOx RTCs exceed \$35,000 per ton or the 12-month rolling average price for current compliance year NOx RTCs exceed \$22,500 per ton;
- A reporting requirement for the Executive Officer starting in Compliance Year 2019—the Executive Officer is to report to the Governing Board if the 12-month rolling average price for IYB NOx RTC falls below \$200,000 per ton;
- A requirement for a report to the Governing Board in response to RTC prices exceeding the thresholds described above. The report shall include a commitment and a schedule to assess control technology implementation, emission reduction, cost-effectiveness, market analysis, and socioeconomic impacts. Such report is to be submitted to the Governing Board at a public hearing no more than 90 days after the Executive Officer determination;

- Provisions that allow an operator of an electricity generating facility that is existing as of December 4, 2015 or has been subject to NOx RECLAIM for at least 10 years to opt-out of the RECLAIM program if all of its NOx emissions for the most recent three compliance years are from equipment that meets current BACT or BARCT for NOx. Once opted-out of RECLAIM, the facility is not allowed to re-enter RECLAIM;
- Provisions to issue NOx Allocations for existing facilities entering RECLAIM after December 5, 2015 based on current BARCT emission factors as represented in tables listed in Rule 2002;
- A delay in relative accuracy testing audit due dates for specified situations;
- Alternative emission calculations for small NOx sources that are exempt from permit requirements²--NOx emission calculations based on certified emission levels are added for sources that are certified to certain emission levels by EPA, ARB or SCAQMD; and
- Standard Conditions for temperature³ adding 60°F as an alternative temperature setting as the standard condition in addition to the existing standard of 68°F under RECLAIM program, provided the same standard is used throughout a RECLAIM facility. All natural gas usages as recorded by gas company meters are expressed at 60°F. Allowing use of 60°F as the standard provides more straightforward emission determinations and recordkeeping for sources that determine fuel usage incorporating Gas Company meters readings.
- A prohibition on use of Annual Emission Report (AER) data submitted more than five years after its original due date for determining Allocations for existing facilities entering RECLAIM—AER reports provide information regarding equipment, process, and production rates which form the basis for determining Allocations for existing facilities as discussed in Chapter
 The five year limit is imposed to ensure information availability for staff to audit and determine accuracy of the AER reports

The Governing Board did not adopt staff proposed provisions that would remove RTCs from the RECLAIM Program equivalent to emissions from equipment and facilities that have shut down. Instead, the Governing Board directed staff to continue discussions with stake holders to refine the proposal, and submit to the Board a proposal at a later date. This effort is currently underway. Finally, the Board Resolution also directed staff to follow-up on the extent and impact that future power demands may have on EGFs.

Breakdowns

Pursuant to Rule 2004(i) – Breakdown Provisions, a facility may request that emission increases due to a breakdown not be counted towards the facility's allocations. In order to qualify for such exclusion, the facility must demonstrate that the excess emissions were the result of a fire or a mechanical or electrical failure caused by circumstances beyond the facility's reasonable control. The

² This amendment was affirmed by the Governing Board on February 5, 2016.

³ This amendment was adopted by the Governing Board on February 5, 2016.

facility must also take steps to minimize emissions resulting from the breakdown, and mitigate the excess emissions to the maximum extent feasible. Applications for exclusion of unmitigated breakdown emissions from a facility's total reported annual RECLAIM emissions must be approved or denied by SCAQMD in writing. In addition, facilities are required to quantify unmitigated breakdown emissions for which an exclusion request has been approved in their APEP report.

As part of the annual program audit report, Rule 2015(d)(3) requires SCAQMD staff to determine whether excess emissions approved to be excluded from RTC reconciliation have been programmatically offset by unused RTCs within the RECLAIM program. If the breakdown emissions exceed the total unused RTCs within the program, any excess breakdown emissions must be offset by either: (1) deducting the amount of emissions not programmatically offset from the RTC holdings for the subsequent compliance year from facilities that had unmitigated breakdown emissions; and/or (2) RTCs obtained by the Executive Officer for the compliance year following the completion of the annual program audit report in an amount sufficient to offset the unmitigated breakdown emissions.

As shown in Table 3-4, a review of APEP reports for Compliance Year 2014 found that no facilities requested to exclude breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2014, no additional RTCs are required to offset breakdown emissions pursuant to Rule 2015(d)(3).

Emittant	Compliance Year 2014 Unused RTCs (tons)	Unmitigated Breakdown Emissions¹ (tons)	Remaining Compliance Year 2014 RTCs (tons)
NOx	2,252	0	2,252
SOx	663	0	663

Table 3-4Breakdown Emission Comparison for Compliance Year 2014

¹ Data for unmitigated breakdown emissions (not counted against Allocation) as reported under APEP reports.

Impact of Changing Universe

As discussed in Chapter 1, one facility was included into and no facilities were excluded from the NOx universe, no facilities were included or excluded from the SOx universe, and four facilities (three NOx only and one NOx and SOx) shut down in Compliance Year 2014. Changes to the universe of RECLAIM facilities have the potential to impact emissions and the supply and demand of RTCs, and therefore, may impact RECLAIM emission reduction goals.

Existing facilities (defined by Rule 2000 as those with valid SCAQMD Permits to Operate issued prior to October 15, 1993 and that continued to be in operation or possess valid SCAQMD permits on October 15, 1993) that are not categorically excluded pursuant to Rule 200(i)(1) may choose to enter the program even though they do not meet the inclusion criteria. Existing facilities that are neither

categorically excluded nor exempt pursuant to Rule 2001(i)(2) may also be included by SCAQMD if their facility-wide emissions increase to four tons or more per year of NOx or SOx or both. When one of these existing facilities enters the program, they are issued RTC allocations based on their operational history pursuant to the methodology prescribed in Rule 2002. Inclusions of existing facilities may affect demand more than supply because even though these facilities are issued RTCs based on their operational history, the amount may not be sufficient to offset their current or future operations. Overall, inclusions shift the accounting of emissions from the universe of non-RECLAIM sources to the universe of RECLAIM sources without actually changing the overall emissions inventory within the South Coast Air Basin. Finally, inclusions change the rules and requirements that apply to the affected facilities. In Compliance Year 2014, no existing facilities elected to opt into the RECLAIM universe or were included into the RECLAIM universe based on the Rule 2001 threshold of actual NOx and/or SOx emissions greater than or equal to four tons per year.

Facilities that received all SCAQMD Permits to Operate on or after October 15, 1993 are defined by Rule 2000 as new facilities. Except as described above for categorically excluded and exempt facilities, new facilities can choose to enter RECLAIM or can be included due to actual NOx or SOx emissions in excess of four tons or more per year. New facilities are not issued RTCs based on operational history, but any external offsets provided by the facility are converted to RTCs. For Compliance Year 2014, no new facilities elected to opt into the RECLAIM universe, but one new facility, as defined by Rule 2000, was included into the RECLAIM universe pursuant to the Rule 2001 threshold. When a new facility joins the RECLAIM universe, it is required to obtain sufficient RTCs to offset its NOx or SOx emissions. These RTCs must be obtained through the trading market and are not issued by SCAQMD to the facility (any external offsets previously provided by the facility are converted to RTCs). Such facilities increase the overall demand for the fixed supply of RTCs because they increase total RECLAIM emissions without increasing the total supply of RTCs.

The shutdown of a RECLAIM facility results in a reduction in actual emissions. The shut down facility retains its RTC holdings, which it may continue to hold as an investment, transfer to another facility under common ownership, or trade on the market. Therefore, although the facility is no longer emitting, its RTCs may be used at another facility. Shutdown facilities have the opposite effect on the RTC market as do new facilities: the overall demand for RTCs is reduced while the supply remains constant. As reported in Chapter 1, four RECLAIM facilities (three NOx-only facilities and one NOx/SOx facility) shut down permanently in Compliance Year 2014. As discussed earlier in this chapter, a Rule 2002 amendment proposal that will remove RTCs from the RECLAIM Program equivalent to emissions from equipment and facilities that have shut down is currently being refined for submittal to the Governing Board during 2016.

A facility is excluded from the RECLAIM universe if SCAQMD staff determines that the facility was included in the program in error. In such cases, both the emissions and the RTCs that were issued to the facility for future years are withdrawn, thereby having a neutral impact on the RTC supply. Exclusions have the reverse effect of inclusions, in that the accounting of emissions is shifted from the RECLAIM universe of sources to the non-RECLAIM universe of sources. No facilities were excluded in Compliance Year 2014. In summary, inclusion of new facilities and the shutdown of RECLAIM facilities, change the demand for RTCs without changing the supply⁴, while exclusions of existing facilities make corresponding changes to both the demand and the supply, thereby mitigating their own impact on the markets and shifting emissions between the RECLAIM and non-RECLAIM universes.

Compliance Year 2014 NOx and SOx audited emissions and initial Compliance Year 2014 allocations for facilities that were shut down, excluded, or included into the program during Compliance Year 2014 are summarized in Tables 3-5 and 3-6.

Table 3-5NOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2014 NOx Emissions (tons)	Initial Compliance Year 2014 NOx Allocations (tons)
Shutdown Facilities	0.1	180.2
Excluded Facilities	Not applicable	Not applicable
Included Facilities	1.3	0.0
RECLAIM Universe	7,447	9,699

Table 3-6

SOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2014 SOx Emissions (tons)	Initial Compliance Year 2014 SOx Allocations (tons)
Shutdown Facilities	0.0	110.9
Excluded Facilities	Not applicable	Not applicable
Included Facilities	Not applicable	Not applicable
RECLAIM Universe	2,176	2,839

Backstop Provisions

Rule 2015 requires that SCAQMD review the RECLAIM program and implement necessary measures to amend it whenever aggregate emissions exceed the aggregate allocations by five percent or more, or whenever the annual average price of RTCs exceeds \$15,000 per ton. Compliance Year 2014 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. At the same time, annual average prices for NOx and SOx RTCs in calendar year 2014 were below \$15,000 per ton, as shown in Chapter 2. Therefore, there is no need to initiate a program review.

⁴ Facilities that were initially permitted after the October 1993 adoption of RECLAIM and that provided NOx or SOx ERCs to offset their emissions are issued RTCs corresponding to the ERCs provided.

CHAPTER 4 NEW SOURCE REVIEW ACTIVITY

Summary

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2014, a total of eight NOx RECLAIM facilities had NSR NOx emission increases, and no SOx RECLAIM facilities had NSR SOx emission increases due to expansion or modification. Consistent with all prior compliance years, there were sufficient NOx and SOx RTCs available to allow for expansion, modification, and modernization by RECLAIM facilities.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio programmatically for NOx emission increases and a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2014, RECLAIM demonstrated federal equivalency with a programmatic NOx offset ratio of 73-to-1 based on the compliance year's total unused allocations and total NSR emission increases for NOx. RECLAIM inherently complies with the federally-required 1-to-1 SOx offset ratio for any compliance year, provided aggregate SOx emissions under RECLAIM are lower than or equal to aggregate SOx allocations for that compliance year. As shown in Chapter 3, there was no programmatic SOx exceedance during Compliance Year 2014. In fact, there was a surplus of SOx RTCs. Therefore, RECLAIM more than complied with the federally-required SOx offset ratio and further quantification of the SOx offset ratio is unnecessary. Compliance with the federally-required offset ratio also demonstrates compliance with any applicable state NNI requirements for new or modified sources. In addition, RECLAIM requires application of, at a minimum, California Best Available Control Technology (BACT), which is at least as stringent as federal Lowest Achievable Emission Rate (LAER). The same BACT guidelines are used to determine applicable BACT to RECLAIM and non-RECLAIM facilities.

Background

Emissions increases from the construction of new or modified stationary sources in non-attainment areas are regulated by both federal NSR and state NNI requirements to ensure that progress toward attainment of ambient air quality standards is not hampered. RECLAIM is designed to comply with federal NSR and state NNI requirements without hindering facilities' ability to expand or modify their operations¹.

Title 42, United States Code §7511a, paragraph (e), requires major sources in extreme non-attainment areas to offset emission increases of extreme nonattainment pollutants and their precursors at a 1.5-to-1 ratio based on potential to emit. However, if all major sources in the extreme non-attainment area are required to implement federal BACT, a 1.2-to-1 offset ratio may be used. Federal BACT is comparable to California's BARCT. SCAQMD requires all major sources to employ federal BACT/California BARCT at a minimum and, therefore, is eligible for a 1.2-to-1 offset ratio for ozone precursors (*i.e.*, NOx and VOC). The federal offset requirement for major SO₂ sources is at least a 1-to-1 ratio. which is lower than the aforementioned 1.2-to-1 ratio. Even though the Basin is in attainment with SOx standards, SOx is a precursor to PM10 which is a nonattainment air pollutant in the Basin. The applicable offset ratio for PM10 is at least 1-to-1, thus, the applicable offset ratio for SOx is 1-to-1. Health and Safety Code §40920.5 requires "no net increase in emissions from new or modified stationary sources of non-attainment pollutants or their precursors" (*i.e.*, a 1-to-1 offset ratio on an actual emissions basis). All actual RECLAIM emissions are offset at a 1-to-1 ratio provided there is not a programmatic exceedance of aggregate allocations, thus satisfying the federal offset ratio for SOx and state NNI requirements for both SOx and NOx. Annual RTC allocations follow a programmatic reduction to reflect changes in federal BACT/California BARCT and thereby comply with federal and state offset requirements.

RECLAIM requires, at a minimum, California BACT for all new or modified sources with increases in hourly potential to emit of RECLAIM pollutants. SCAQMD uses the same BACT guidelines in applying BACT to RECLAIM and non-RECLAIM facilities. Furthermore, BACT for major sources is at least as stringent as LAER (LAER is not applicable to minor facilities as defined in Rule 1302(t)). Thus, RECLAIM complies with both state and federal requirements regarding control technologies for new or modified sources. In addition to offset and BACT requirements, RECLAIM subjects RTC trades that are conducted to mitigate emissions increases over the sum of the facility's starting allocation and non-tradable/non-usable credits to trading zone restrictions to ensure net ambient air quality improvement within the sensitive zone established by Health and Safety Code §40410.5. Furthermore, facilities with actual RECLAIM emissions that exceed their initial allocation by 40 tons per year or more are required to analyze the potential impact of their emissions increases through air quality modeling.

Rule 2005 – New Source Review for RECLAIM requires RECLAIM facilities to provide (hold), prior to the start of operation, sufficient RTCs to offset the annual increase in potential emissions for the first year of operation at a 1-to-1 ratio. The same rule also requires all new RECLAIM facilities² and all other RECLAIM

¹ Federal NSR applies to federal major sources (sources with the potential to emit at least 10 tons of NOx or 100 tons of SOx per year for the South Coast Air Basin) and state NNI requirements apply to all NOx sources and to SOx sources with the potential to emit at least 15 tons per year in the South Coast Air Basin. RECLAIM's NSR provisions apply to all facilities in the program, including those not subject to federal NSR or state NNI. (Although the threshold for RECLAIM inclusions is four tons per year of NOx or SOx emissions, some RECLAIM facilities have actual emissions much less than 4 tons per year).

² New facilities are facilities that received all District Permits to Construct on or after October 15, 1993.

facilities that increase their annual allocations above the level of their starting allocations plus non-tradable/non-usable credits to provide sufficient RTCs to offset the annual potential emissions increase from new or modified source(s) at a 1-to-1 ratio at the commencement of each compliance year after the start of operation of the new or modified source(s). Although RECLAIM allows a 1-to-1 offset ratio for emissions increases, RECLAIM complies with the federal 1.2-to-1 offset requirement for NOx on an aggregate basis. This annual program audit report assesses NSR permitting activities for Compliance Year 2014 to verify that programmatic compliance of RECLAIM with federal and state NSR requirements has been maintained.

NSR Activity

Evaluation of NSR data for Compliance Year 2014 shows that RECLAIM facilities were able to expand and modify their operations while complying with NSR requirements. During Compliance Year 2014, a total of eight NOx RECLAIM facilities (five in Cycle 1 and three in Cycle 2) were issued permits to operate, which resulted in a total of 31.21 tons per year of NOx emission increases from starting operations of new or modified sources, and no SOx RECLAIM facilities experienced a SOx NSR emission increase that resulted from starting operations of new or modified sources. These emission increases were calculated pursuant to Rule 2005(d) – Emission Increase. As in previous years, there were adequate unused RTCs (NOx: 2,252 tons, SOx: 663 tons; see Chapter 3) in the RECLAIM universe available for use to offset these emission increases at the appropriate offset ratios.

NSR Compliance Demonstration

RECLAIM is designed to programmatically comply with the federal NSR offset requirements. Meeting the NSR requirement (offset ratio of 1.2-to-1 for NOx and at least 1-to-1 for SOx) also demonstrates compliance with the state NNI requirements. Section 173 (c) of the federal Clean Air Act (CAA) states that only emissions reductions beyond the requirements of the CAA, such as federal Reasonably Available Control Technology (RACT), shall be considered creditable as emissions reductions for offset purposes. Since the initial allocations (total RTC supply in Compliance Year 1994) already met federal RACT requirements when the program was initially implemented, any emissions reductions beyond the initial allocations are available for NSR offset purposes until RACT becomes more stringent. The programmatic offset ratio calculations presented in the Annual RECLAIM Audit Reports for Compliance Years 1994 through 2004 relied upon aggregate Compliance Year 1994 allocations as representing RACT. However, staff recognizes that RACT may have become more stringent in the intervening years, so it may no longer be appropriate to calculate the programmatic offset ratio based upon aggregate 1994 allocations.

Aggregate allocations for each compliance year represent federal BACT, which is equivalent to local BARCT. Federal BACT is more stringent than federal RACT (*i.e.*, the best available control technology is more stringent than what is reasonably available), so staff started using current allocations (federal BACT) as a surrogate for RACT as the basis for calculating programmatic NOx and SOx offset ratios in the annual program audit report for Compliance Year 2005 and is continuing to do so for NOx in this report. This is a more conservative (*i.e.*, more

stringent) approach than using actual RACT and is much more conservative than using aggregate Compliance Year 1994 allocations. The advantage of this approach is that, as long as the calculated NOx offset ratio is at least 1.2-to-1, it provides certainty that RECLAIM has complied with federal and state offset requirements without the need to know exactly what RACT is for RECLAIM facilities. However, if this very conservative approach should ever fail to demonstrate that the aggregate NOx offset ratio for any year is at least 1.2-to-1, that will not necessarily mean RECLAIM has not actually complied with the federally required 1.2-to-1 NOx offset ratio. Rather it will indicate that further analysis is required to accurately identify RACT so that the actual offset ratio can be calculated and a compliance determination made.

Provided aggregate RECLAIM emissions do not exceed aggregate allocations, all RECLAIM emissions are offset at a ratio of 1-to-1. This leaves all unused allocations available to provide offsets beyond the 1-to-1 ratio for NSR emission increases. Unused allocations are based on all Cycle 1 and Cycle 2 RTCs of a given compliance year and the aggregate RECLAIM emissions for the selected time period. The NSR emission increase is the sum of emission increases due to permit activities at all RECLAIM facilities during the same compliance year. The aggregate RECLAIM offset ratios are expressed by the following formula:

Offset Ratio = (1 + <u>compliance year's total unused allocations</u>)-to-1 total NSR emission increases

As stated in the previous section under the title of "NSR Activity", permits to operate issued to eight RECLAIM facilities resulted in 31.21 tons of NOx emission increase pursuant to Rule 2005(d). Additionally, as identified in Table 3-2 (Annual NOx Emissions for Compliance Years 1994 through 2014), 2,252 tons of Compliance Year 2014 NOx RTCs remained unused. Therefore, the Compliance Year 2014 NOx programmatic offset ratio calculated from this methodology is 73-to-1 as shown below:

Offset Ratio = $(1 + \frac{2,252 \text{ tons}}{31.21 \text{ tons}})$ -to-1 =73-to-1

RECLAIM continues to generate sufficient excess emission reductions to provide a NOx offset ratio greater than the 1.2-to-1 required by federal law. This compliance with the federal offset requirements is built into the RECLAIM program through annual reductions of the allocations assigned to RECLAIM facilities and the subsequent allocation adjustments adopted by the Governing Board to implement BARCT. The required offset ratio for SOx is 1-to-1. Since RECLAIM facilities are required to secure, at a minimum, adequate RTCs to cover their actual emissions, the SOx 1-to-1 offset ratio is met automatically provided there is no programmatic exceedance of aggregate SOx allocations for that compliance year. As stated earlier in Chapter 3, there were 663 tons of excess (unused) SOx RTCs for Compliance Year 2013. Therefore, there is certainty that both the federally required SOx offset ratio and the California NNI requirement for SOx were satisfied and a separate calculation of the SOx offset ratio is not necessary.

BACT and modeling are also required for any RECLAIM facility that installs new equipment or modifies sources if the installation or modification results in an increase in emissions of RECLAIM pollutants. Furthermore, the RTC trading zone restrictions in Rule 2005 – New Source Review for RECLAIM, limit trades conducted to offset emission increases over the sum of the facility's starting allocation and non-tradable/non-usable credits to ensure net ambient air quality improvement within the sensitive zone, as required by state law.

The result of the review of NSR activity in Compliance Year 2014 shows that RECLAIM is in compliance with both state NNI and federal NSR requirements. SCAQMD staff will continue to monitor NSR activity under RECLAIM in order to assure continued progress toward attainment of ambient air quality standards without hampering economic growth in the Basin.

Modeling Requirements

Rule 2004, as amended in May 2001, requires RECLAIM facilities with actual NOx or SOx emissions exceeding their initial allocation in Compliance Year 1994 by 40 tons per year or more to conduct modeling to analyze the potential impact of the increased emissions. The modeling analysis is required to be submitted within 90 days of the end of the compliance year. For Compliance Year 2014, three RECLAIM facilities were subject to the 40 ton modeling requirement; two facilities for NOx emissions, and one for SOx emissions.

This modeling is performed with an EPA approved air dispersion model to assess the impact of a facilities NOx or SOx emission increase on compliance with all applicable state and federal ambient air quality standards (AAQS). Air dispersion modeling submitted by each facility is reviewed by staff and revised as necessary to comply with SCAQMD's air dispersion modeling procedures including use of appropriate meteorological data for the facility location. Per Rule 2004 (q)(3), the modeling submitted by a facility must include source parameters and emissions for every major source located at the facility. For comparison against applicable state and federal AAQS, the predicted modeling impacts due to a facilities NOx or SOx emission increases are added to the highest background NOx or SOx concentration measured at the nearest ambient air monitoring station during the previous three years. Modeling runs are performed with worst-case emissions data for averaging periods that coincide with the averaging period of each applicable AAQS (e.g. 1-hr, 24-hr, annual).

The SOx facility, which had an initial SOx allocation in 1994 and exceed this initial allocation by more than 40 tons in Compliance Year 2014, submitted modeling that demonstrated that SOx emissions from their major sources during 2014 will not cause an exceedance of any state or federal SO₂ AAQS. One of the NOx facilities had an initial NOx allocation in 1994 and exceeded this initial allocation by more than 40 tons in Compliance Year 2014. This facility submitted modeling that demonstrated that NOx emissions from their major sources during 2014 will not cause an exceedance of any state or federal NO₂ AAQS. The other NOx facility, which had no initial allocation in Compliance Year 1994 and whose NOx emissions were above the 40 ton per year threshold, modeled NOx emissions at a much higher emission level prior to its recent commissioning.

This initial modeling determined that the annual NOx emission increase would not cause an exceedance of state or federal NO₂ AAQS. Since the initial modeling was conducted at a much higher emission level than what the facility emitted in 2014, this facility did not require additional modeling analysis (*i.e.*, the fact that modeling conducted during the permitting process demonstrated that emissions at the potential to emit level would not cause an exceedance of the state or federal AAQS for NO₂ provides certainty that the much lower actual emissions level did not cause such an exceedance).

CHAPTER 5 COMPLIANCE

Summary

Of the 276 NOx RECLAIM facilities audited during Compliance Year 2014, a total of 265 facilities (96%) complied with their NOx allocations, and 32 of the 33 SOx facilities (97%) complied with their SOx allocations. Twelve facilities exceeded their allocations (11 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocation) during Compliance Year 2014. The 11 facilities that exceeded their NOx allocations had aggregate NOx emissions of 140.1 tons and did not have adequate allocations to offset 32.4 tons (or 23.1%) of their combined emissions. The one SOx facility that exceeded its SOx allocation had total SOx emissions of 311.1 tons and did not have adequate allocations to offset 26.3 tons (or 8.5%). The NOx and SOx exceedance amounts are relatively small compared to the overall NOx and SOx allocations for Compliance Year 2014 (0.33% of total NOx allocations and 0.93% of total SOx allocations). The exceedances from these facilities did not impact the overall RECLAIM emission reduction goals. Pursuant to Rule 2010(b)(1)(A), these facilities had their respective exceedances deducted from their annual allocations for the compliance year subsequent to the date of SCAQMD's determination that the facilities exceeded their Compliance Year 2014 allocations. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2014 (i.e., aggregate emissions for all RECLAIM facilities were well below aggregate allocations).

Background

RECLAIM facilities have the flexibility to choose among compliance options to meet their annual allocations by reducing emissions, trading RTCs, or a combination of both. However, this flexibility must be supported by standardized emission MRR requirements to ensure the reported emissions are real, quantifiable, and enforceable. As a result, detailed MRR protocols are specified in the RECLAIM regulation to provide accurate and verifiable emission reports.

The MRR requirements were designed to provide accurate and up-to-date emission reports. Once facilities install and complete certification of the required monitoring and reporting equipment, they are relieved from command-and-control rule limits and requirements subsumed under Rule 2001. Mass emissions from RECLAIM facilities are then determined directly by monitoring and reporting equipment for some sources and from data generated by monitoring equipment for others. If monitoring equipment fails to produce quality-assured data or the facility fails to file timely emissions reports, RECLAIM rules require emissions be determined by a rule-prescribed methodology known as Missing Data Procedures or "MDP." Depending on past performance of the monitoring equipment (*i.e.*, availability of quality-assured data) and the duration of the missing data period, MDP use a tiered approach to calculate emissions. As availability of quality-assured data increases, the MDP-calculated emissions become more representative of the actual emissions, but when the availability of

quality-assured data is low, MDP calculations become more conservative and approach, to some extent, "worst case" assessments.

Allocation Compliance

Requirements

At the beginning of the RECLAIM program in 1994 or at the time a facility is included in the RECLAIM program, each RECLAIM facility is issued an annual allocation for each compliance year pursuant to methodology prescribed in Rule 2002. For a facility in existence prior to October 1993, it is issued allocations by SCAQMD based on its historical production rate. A facility without an operating history prior to 1994 receives no allocation and must purchase enough RTCs to cover the emissions for their operations, except facilities that have provided ERCs to offset emission increases prior to entering RECLAIM are issued RTCs generated by converting the surrendered ERCs to RTCs. Additionally, all facilities entering RECLAIM holding any ERCs generated at and held by the individual facility itself have those ERCs converted to RTCs and added to their allocated RTCs. Knowing their emission goals, RECLAIM facilities have the flexibility to manage their emissions in order to meet their allocations in the most cost-effective manner. Facilities may employ emission control technology or process changes to reduce emissions, buy RTCs, or sell unneeded RTCs.

Facilities may buy RTCs or sell excess RTCs at any time during the year in order to ensure that their emissions are covered. There is a thirty day reconciliation period commencing at the end of each of the first three quarters of each compliance year. In addition, after the end of each compliance year, there is a 60-day reconciliation period (instead of 30 days as at the end of the first three quarters) during which facilities have a final opportunity to buy or sell RTCs for that compliance year. These reconciliation periods are provided for facilities to review and correct their emission reports as well as securing adequate allocations. Each RECLAIM facility must hold sufficient RTCs in its allocation account to cover (or reconcile with) its quarterly as well as year-to-date emissions for the compliance year at the end of each reconciliation period. By the end of each quarterly and annual reconciliation period, each facility is required to certify the emissions for the preceding quarter and/or compliance year by submitting its Quarterly Certification of Emissions Reports (QCERs) and/or APEP report, respectively.

Compliance Audit

Since the beginning of the program, SCAQMD staff has conducted annual audits of each RECLAIM facility to ensure their integrity and reliability. The audit process includes conducting field inspections to check process equipment, monitoring devices, and operational records. Additionally, emissions calculations are performed in order to verify emissions reported electronically to SCAQMD or submitted in QCERs and APEP reports. For Compliance Year 2014, these inspections revealed that some facilities did not obtain or record valid monitoring data, were unable to substantiate reported emissions with valid records, failed to submit emission reports when due, made errors in quantifying their emissions (*e.g.*, arithmetic errors), used incorrect adjustment factors (*e.g.*, bias adjustment factors), failed to correct fuel usage to standard conditions, used emission calculation methodologies not allowed under the rules, or used MDP

inappropriately. Other common mistakes included reporting non-RECLAIM emissions and/or omitting reportable emissions. Appropriate compliance actions are also taken based on audit findings.

Whenever an audit revealed a facility's emissions to be in excess of its annual allocation, the facility was provided an opportunity to review the audit and to present additional data to further refine audit results. This extensive and rigorous audit process ensures valid and reliable emissions data.

Compliance Status

During this compliance year, a total of 12 RECLAIM facilities failed to reconcile their emissions (11 NOx-only facilities and one NOx and SOx facility that only exceeded its SOx allocation). Seven of these 12 facilities (six NOx-only facilities and the one NOx/SOx facility that exceeded its SOx allocations) failed to secure sufficient RTCs during either the guarterly or annual reconciliation periods to cover their reported emissions. Three of the six NOx-only facilities had additional exceedances because they under-reported their emissions and didn't hold sufficient RTCs to reconcile their audited emissions. Of the eleven facilities with NOx exceedances, the remaining five facilities (NOx-only) had exceedances solely because they under-reported their emissions and didn't hold sufficient RTCs to reconcile their audited emissions. Reasons for under-reported NOx emissions include one or more of the following: utilization of incorrect moisture content to convert measured stack flow to dry stack flow, failure to correct measured fuel flow to standard conditions, failure to account for guarterly NOx emissions from a piece of NOx emitting equipment, failure to use correct equipment rating, failure to use correct emission factor(s), and failure to use applicable missing data procedures.

Overall, the Compliance Year 2014 allocation compliance rates for facilities are 96% (265 out of 276 facilities) for NOx RECLAIM and 97% (32 out of 33 facilities) for SOx RECLAIM. For purposes of comparison, the allocation compliance rates for Compliance Year 2013 were 97% and 94% for NOx and SOx RECLAIM facilities, respectively. The 11 facilities that had NOx emissions in excess of their individual NOx allocations had 140.1 tons of NOx emissions and did not have adequate RTCs to cover 32.4 of those tons (or 23.1%). The SOx facility that exceeded its SOx allocation and had total SOx emissions of 311.1 tons did not have adequate allocations to offset 26.3 tons (or 8.5%). The NOx and SOx exceedance amounts are relatively small compared to the overall allocations for Compliance Year 2014 (0.33% of aggregate NOx allocations and 0.93% of aggregate SOx allocations). Pursuant to Rule 2010(b)(1)(A), all twelve facilities had their respective NOx or SOx Allocation exceedances deducted from their annual emissions allocations for the compliance year subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2014 allocations.

Impact of Missing Data Procedures

MDP was designed to provide a method for determining emissions when an emission monitoring system does not yield valid emissions. For major sources, these occurrences may be caused by failure of the monitoring systems, the data acquisition and handling systems, or by lapses in the Continuous Emissions Monitoring System (CEMS) certification period. Major sources are also required to use MDP for determining emissions whenever daily emissions reports are not submitted by the applicable deadline. When comparing actual emissions with a facility's use of substituted MDP emissions, the range of MDP emissions can vary from "more representative" to being overstated to reflect a "worst case"¹ scenario. For instance, an MDP "worst case" scenario may occur for major sources that fail to have their CEMS certified in a timely manner, and therefore, have no valid CEMS data that can be used for substitution. In other cases, where prior CEMS data is available, MDP is applied in tiers depending on the duration of missing data periods and the historical availability of monitoring systems. As the duration of missing data periods gets shorter and the historical availability of monitoring systems gets higher, the substitute data yielded by MDP becomes more representative of actual emissions².

In addition to MDP for major sources, RECLAIM rules also define MDP for large sources and process units. These procedures are applicable when a process monitoring device fails or when a facility operator fails to record fuel usage or other monitored data (*e.g.*, hours of operation). The resulting MDP emissions reports are reasonably representative of the actual emissions because averaged or maximum emissions from previous operating periods may be used. However, for extended missing data periods (more than two months for large sources or four quarters or more for process units) or when emissions data for the preceding year are unavailable, large source and process unit MDP are also based on maximum operation or worst case assumptions.

Based on APEP reports, 97 NOx facilities and 13 SOx facilities used MDP in reporting portions of their annual emissions during Compliance Year 2014. In terms of mass emissions, 3.3% of the total reported NOx emissions and 3.0% of the total reported SOx emissions in the APEP reports were calculated using MDP for Compliance Year 2014. Table 5-1 compares the impact of MDP on reported annual emissions for the last few compliance years to the second compliance year, 1995 (MDP was not fully implemented during Compliance Year 1994).

¹ Based on uncontrolled emission factor at maximum rated capacity of the source and 24 hours per day.

² Based on averaged emissions during periods before and after the period for which data is not available.

Year	-	orted Emissions stitute Data [*]		
	NOx	SOx		
1995	23.0% (65 / 6,070)	40.0% (12 / 3,403)		
2008	7.6% (86 / 625)	7.5% (9 / 242)		
2009	7.8% (103 / 554)	13.8% (15 / 403)		
2010	7.0% (93 / 488)	6.1% (23 / 168)		
2011	6.2% (94 / 435)	12.4% (19 / 328)		
2012	7.5% (95 / 560)	4.5% (13 / 114)		
2013	3.9% (107 / 287)	5.6% (15 / 113)		
2014	3.3% (97 / 247)	3.0% (13 / 66)		

Table 5-1MDP Impact on Annual Emissions

Numbers in parenthesis that are separated by a slash represent the number of facilities that reported use of MDP in each compliance year and tons of emissions based on MDP.

Most of the issues associated with CEMS certifications were resolved prior to Compliance Year 1999. Since then, very few facilities have had to submit emissions reports based on the worst case scenario under MDP, which may considerably overstate the actual emissions from major sources. As an example, most facilities that reported emissions using MDP in 1995 did so because they did not have their CEMS certified in time to report actual emissions. Since their CEMS had no prior data, MDP called for an application of the most conservative procedure to calculate substitute data by assuming continuous uncontrolled operation at the maximum rated capacity of the facility's equipment, regardless of the actual operational level during the missing data periods. As a result, the calculations yielded substitute data that may have been much higher than the actual emissions. In comparison to the 65 NOx facilities implementing MDP in Compliance Year 1995, 97 facilities reported NOx emissions using MDP in Compliance Year 2014. Even though the number of facilities is higher than in 1995, the percentage of emissions reported using MDP during Compliance Year 2014 is much lower than it was in 1995 (3.3% compared to 23%). Additionally, in terms of quantity, NOx emissions in Compliance Year 2014 were about 4% of those in Compliance Year 1995 (247 tons compared to 6,070 tons). Since most CEMS were certified and had been reporting actual emissions by the beginning of Compliance Year 2000, facilities that had to calculate substitute data were able to apply less conservative methods of calculating MDP for systems with high availability and shorter duration missing data periods. Therefore, the substitute data they calculated for their missing data periods were more likely to be representative of the actual emissions.

It is important to note that portions of annual emissions attributed to MDP include actual emissions from the sources as well as the possibility of overestimated emissions. As shown in Table 5-1, approximately 3% of reported NOx annual emissions were calculated using MDP in Compliance Year 2014. MDP may significantly overestimate emissions from some of the sources that operate intermittently and have low monitoring system availability, and/or lengthy missing data periods. Even though a portion of the 3% may be overestimated emissions due to conservative MDP, a significant portion (or possibly all) of it could have also been actual emissions from the sources. Unfortunately, the portion that represents the actual emissions cannot be readily estimated because the extent of this effect varies widely, depending on source categories and operating parameters, as well as the tier of MDP applied. For Compliance Year 2014, a significant portion of NOx MDP emissions data (41%) and majority of SOx MDP emissions data (93%) were reported by refineries, which tend to operate near maximum capacity for 24 hours per day and seven days per week, except for scheduled shutdowns for maintenance and barring major breakdowns or other unforeseeable circumstances. Missing data emissions calculated using the lower tiers of MDP (*i.e.*, 1N Procedure or 30-day maximum value) for facilities such as refineries that have relatively constant operation near their maximum operation are generally reflective of actual emissions because peak values are close to average values for these operations.

Emissions Monitoring

Overview

The reproducibility of reported RECLAIM facility emissions (and the underlying calculations)—and thereby the enforceability of the RECLAIM program—is assured through a tiered hierarchy of MRR requirements. A facility's equipment falls into an MRR category based on the kind of equipment it is and on the level of emissions produced or potentially produced by the equipment. RECLAIM divides all NOx sources into major sources, large sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. All SOx sources are divided into major sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. Table 5-2 shows the monitoring requirements applicable to each of these categories.

Table 5-2 Monitoring Requirements for RECLAIM Sources

Source Category	Major Sources (NOx and SOx)	Large Sources (NOx only)	Process Units and Rule 219 Equipment (NOx and SOx)		
Monitoring Method	Continuous Emissions Monitoring System (CEMS) or Alternative CEMS (ACEMS)	Fuel Meter or Continuous Process Monitoring System (CPMS)	Fuel Meter, Timer, or CPMS		
Reporting Frequency	Daily	Monthly	Quarterly		

Continuous Emissions Monitoring System (CEMS)

Requirements

CEMS represent both the most accurate and the most reliable method of calculating emissions because they continuously monitor all of the parameters necessary to directly determine mass emissions of NOx and SOx. They are also the most costly method. These attributes make CEMS the most appropriate method for the largest emission-potential equipment in the RECLAIM universe, major sources.

Alternative Continuous Emissions Monitoring Systems (ACEMS) are alternatives to CEMS that are allowed under the RECLAIM regulation. These are devices that do not directly monitor NOx or SOx mass emissions; instead, they correlate multiple process parameters to arrive at mass emissions. To be approved for RECLAIM MRR purposes, ACEMS must be determined by SCAQMD to be equivalent to CEMS in relative accuracy, reliability, reproducibility, and timeliness

Even though the number of major sources monitored by either CEMS or ACEMS represent 19% and 63% of all permitted RECLAIM NOx and SOx sources during Compliance Year 2014, respectively, reported emissions for Compliance Year 2014 revealed that 81% of all RECLAIM NOx emissions and 98% of all RECLAIM SOx emissions were determined by CEMS or ACEMS.

Compliance Status

By the end of calendar year 1999, almost all facilities that were required to have CEMS had their CEMS certified or provisionally approved. The only remaining uncertified CEMS are for sources that recently became subject to major source reporting requirements and sources that modified their CEMS. Typically, there will be a few new major sources each year. Therefore, there will continue to be a small number of CEMS in the certification process at any time.

Semiannual and Annual Assessments of CEMS

RECLAIM facilities conduct their Relative Accuracy Test Audit (RATA) of certified CEMS using private sector testing laboratories approved under SCAQMD's Laboratory Approval Program (LAP). These tests are conducted either semiannually or annually, depending on the most recent relative accuracy value

(the sum of the average differences and the confidence coefficient) for each source. The interval is annual only when all required relative accuracies obtained during an audit are 7.5% or less (*i.e.*, more accurate).

To verify the quality of CEMS, the RATA report compares the CEMS data to data taken simultaneously, according to approved testing methods (also known as reference methods), by a LAP-approved source testing contractor. In order to have a passing RATA, each of the following relative accuracy performance criteria must be met: The relative accuracy of the CEMS results relative to the reference method results must be within ±20% for pollutant concentration, ±15% for stack flow rate, and ±20% for pollutant mass emission rate. The RATAs also determine whether CEMS data must be adjusted for low readings compared to the reference method (bias adjustment factor), and by how much. The RATA presents two pieces of data, the CEMS bias (how much it differs from the reference method on the average) and the CEMS confidence coefficient (how variable that bias or average difference is).

Tables 5-3 and 5-4, respectively, summarize the 2014 and 2015 calendar years' passing rates for RATAs of certified CEMS for NOx and SOx concentration, total sulfur in fuel gas concentrations, stack flow rate (in-stack monitors and F-factor based calculations), and NOx and SOx mass emissions. However, the tables do not include SOx mass emissions calculated from total sulfur analyzer systems because such systems serve numerous devices, and therefore are not suitable for mass emissions-based RATA testing. As noted in the footnotes for each table, the calendar year 2014 and 2015 passing rates are calculated from RATA data submitted before January 16, 2105 and January 14, 2016, respectively, and may exclude some RATA data from the fourth quarter of each year.

Table 5-3 Passing Rates Based on RATAs of Certified CEMS in 2014¹

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO ₂					Stack nitor	F-Factor Based Calc.		NOY		SOx ³	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
351	100	83	100	13	100	47	100	390	100	351	100	46	100

¹ All passing rates calculated from data submitted before January 16, 2015 and may exclude some data from the fourth quarter calendar year 2014.

² Includes Cylinder Gas Audit (CGA) tests.

³ Does not include SOx emissions calculated from total sulfur analyzers.

Concentration					Stack Flow Rate				Mass Emissions				
NOx		SO ₂				Stack nitor	F-Factor Based Calc.				SOx ³		
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
373	100	93	100	13	100	42	100	379	100	373	100	80	100

Table 5-4 Passing Rates Based on RATAs of Certified CEMS in 2015¹

¹ All passing rates calculated from data submitted before January 14, 2016 and may exclude some data from the fourth quarter of calendar year 2015. All test audits were submitted electronically in 2015

² Includes Cylinder Gas Audit (CGA) tests.

³ Does not include SOx emissions calculated from total sulfur analyzers.

As indicated in Tables 5-3 and 5-4, the passing rates for NOx/SO₂ concentration, stack flow rate, and mass emissions were all 100%. The passing rates for total sulfur analyzers were also 100%. Since the inception of RECLAIM there have been significant improvements with respect to the availability of reliable calibration gas, the reliability of the reference method, and an understanding of the factors that influence valid total sulfur analyzer data.

Electronic Data Reporting of RATA Results

Facilities operating CEMS under RECLAIM are required to submit RATA results to SCAQMD. An electronic reporting system, known as Electronic Data Reporting (EDR), was set up to allow RATA results to be submitted electronically using a standardized format in lieu of the traditional formal source test reports in paper form. This system minimizes the amount of material the facility must submit to SCAQMD and also expedites reviews. All RATA results for calendar year 2015 were submitted via EDR.

Non-Major Source Monitoring, Reporting, and Recordkeeping

Emissions quantified for large sources are primarily based on concentration limits or emission rates specified in the Facility Permit. Other variables used in the calculation of large source emissions are dependent on the specific process of the equipment, but generally include fuel usage, applicable dry F-factor, and the higher heating value of the fuel used, which are collectively used to calculate stack flow rate. RECLAIM requires large sources to be source tested within defined three-year windows in order to validate fuel meter accuracy and the equipment's concentration limit or emission rate. Since emissions quantification is fuel-based, the monitoring equipment required to quantify emissions is a nonresettable fuel meter that must be corrected to standard temperature and pressure. Large source emission data must be submitted electronically on a monthly basis.

Process unit emission calculations are similar to those of large sources in that emissions are quantified using the fuel-based calculations for either a concentration limit or an emission factor specified in the Facility Permit. Similar to large sources, variables used in emission calculations for process units are dependent on the equipment's specific process, but generally include fuel usage, applicable dry F-factor, and the higher heating value of the fuel used. Process units that are permitted with concentration limits are also required to be sourcetested, but within specified five-year windows rather than three-year windows. Emissions for equipment exempt from obtaining a written permit pursuant to Rule 219 are quantified using emission factors and fuel usage. No source testing is required for such exempt equipment. Since emissions calculations are fuelbased for both process units and exempt equipment, the monitoring equipment required to quantify emissions is a non-resettable fuel meter, corrected to standard temperature and pressure. Alternately, a timer may be used to record operational time. In such cases, fuel usage is determined based on maximum rated capacity of the source. Process units and exempt equipment must submit emission reports electronically on a quarterly basis.

Emissions Reporting

Requirements

RECLAIM uses electronic reporting technology to streamline reporting requirements for both facilities and SCAQMD, and to help automate compliance tracking. Under RECLAIM, facilities report their emissions electronically on a per device basis to SCAQMD's Central Station computer as follows:

- Major sources must use a Remote Terminal Unit (RTU) to telecommunicate emission data to SCAQMD's Central Station. The RTU collects data, performs calculations, generates the appropriate data files, and transmits the data to the Central Station. This entire process is required to be performed by the RTU on a daily basis without human intervention.
- Emission data for all equipment other than major sources may be transmitted via RTU or compiled manually and transmitted to the Central Station via modem. Alternatively, operators of non-major sources may use SCAQMD's internet based application, Web Access To Electronic Reporting System (WATERS) to transmit emission data for non-major sources via internet connection. The data may be transmitted directly by the facility or through a third party.

Compliance Status

The main concern for emission reporting is the timely submittal of accurate daily emissions reports from major sources. If daily reports are not submitted by the specified deadlines, RECLAIM rules may require that emissions from CEMS be ignored and the emissions be calculated using MDP. Daily emission reports are submitted by the RTU of the CEMS to SCAQMD's Central Station via telephone lines. Often communication errors between the two points are not readily detectable by facility operators. Undetected errors can cause facility operators to believe that daily reports were submitted when they were not received by the Central Station. In addition to providing operators a means to confirm the receipt of their reports, the WATERS application can also display electronic reports that were submitted to, and received by, the Central Station. This system helps reduce instances where MDP must be used for late or missing daily reports, because the operators can verify that the Central Station received their daily reports, and can resubmit them if there were communication errors.

Protocol Review

Even though review of MRR protocols was only required by Rule 2015(b)(1) for the first three compliance years of the RECLAIM program, staff continues to review the effectiveness of enforcement and MRR protocols. Based on such review, occasional revisions to the protocols may be needed to achieve improved measurement and enforcement of RECLAIM emission reductions, while minimizing administrative costs to RECLAIM facilities and SCAQMD.

Since the RECLAIM program was adopted, staff has produced rule interpretations and implementation guidance documents to clarify and resolve specific concerns about the protocols raised by RECLAIM participants or observed by SCAQMD staff. In situations where staff could not interpret existing rule requirements to adequately address the issues at hand, the protocols and/or rules have been amended.

When the RECLAIM program first began, the ability to electronically transmit emissions data to SCAQMD's Central Station via modem was considered stateof-the-art technology. However, that technology is now antiquated and finding replacement components (*e.g.*, slower baud-rate modems) is becoming increasingly difficult. As such, SCAQMD is evaluating options to either upgrade or replace the current Central Station. SCAQMD plans to initiate a Working Group during 2016. Key factors that need to be considered include ease of implementation and cost impacts on RECLAIM facilities and SCAQMD. Any proposed alternative must be broadly applicable, be capable to support automatic daily transmission of reports without any human intervention, and allow adequate time for testing and implementation. Progress on this effort will be presented in future annual program audit reports.

CHAPTER 6 REPORTED JOB IMPACTS

Summary

This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP) reports. The analysis focuses exclusively on job impacts at RECLAIM facilities and determination if those job impacts were directly attributable to RECLAIM as reported by those facilities. Additional benefits to the local economy (e.g., generating jobs for consulting firms, source testing firms and CEMS vendors) attributable to the RECLAIM program, as well as factors outside of RECLAIM (e.g., the prevailing economic climate), impact the job market. However, these factors are not evaluated in this report. Also, job losses and job gains are strictly based on RECLAIM facilities' reported information. SCAQMD staff is not able to independently verify the accuracy of the reported job impact information.

According to the Compliance Year 2014 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 266 jobs, representing 0.26% of their total employment. None of the four RECLAIM facilities that shut down during Compliance Year 2014 cited RECLAIM as a factor contributing to the decision to shutdown. No facilities reported a gain or loss of jobs due to RECLAIM.

Background

The APEP reports submitted by RECLAIM facilities include survey forms that are used to evaluate the socioeconomic impacts of the program. Facilities were asked to indicate the number of jobs at the beginning of Compliance Year 2014 and any changes in the number of jobs that took place during the compliance year in each of three categories: manufacturing, sale of products, and non-manufacturing. The numbers of jobs gained and lost reported by facilities in each category during the compliance year were tabulated.

Additionally, APEP reports ask facilities that shut down during Compliance Year 2014 to provide the reasons for their closure. APEP reports also allow facilities to indicate whether the RECLAIM program led to the creation or elimination of jobs during Compliance Year 2014.

Since data regarding job impacts and facility shutdowns are derived from the APEP reports, the submittal of these reports is essential to assessing the influence that the RECLAIM program has on these issues. The following discussion represents data obtained from APEP reports submitted to SCAQMD for Compliance Year 2014 and clarifying information collected by SCAQMD staff. SCAQMD staff is not able to verify the accuracy of the reported job impact information.

Job Impacts

Table 6-1 summarizes job impact data gathered from Compliance Year 2014 APEP reports and follow-up contacts with facilities. A total of 128 facilities reported 7,052 job gains, while 131 facilities reported a total of 6,786 job losses. Net job gains were reported in two of the three categories: sales of products (34), and manufacturing (382), whereas net job losses were reported in the remaining category: non-manufacturing (150). Table 6-1 shows a total net gain of 266 jobs, which represents a net jobs increase of 0.26% at RECLAIM facilities during Compliance Year 2014.

Description	Manufacture	Sales of Products	Non- Manufacture	Total ¹
Initial Jobs	35,945	885	66,368	103,198
Overall Job Gain	2,631	163	4,258	7,052
Overall Job Loss	2,249	129	4,408	6,786
Final Jobs	36,327	919	66,218	103,464
Net Job Change	382	34	-150	266
Percent (%) Job Change	1.06%	3.84%	-0.23%	0.26%
Facilities Reporting Job Gains	87	20	76	128
Facilities Reporting Job Losses	98	22	72	131

Table 6-1Job Impacts at RECLAIM Facilities for Compliance Year 2014

¹ The total number of facilities reporting job gains or losses does not equal the sum of the number of facilities reporting job changes in each category (*i.e.*, the manufacture, sales of products, and non-manufacture categories) due to the fact that some facilities may report changes under more than one of these categories.

Data in Table 6-1 include four RECLAIM facilities that were reported to have shut down or ceased operations in Compliance Year 2014 as listed in Appendix C. One facility was sold and consolidated its operations with its parent company. A second facility had all equipment removed from the site and abandoned the property. Staff attempted to contact the owners, but were unable to obtain further clarification regarding the reason for shutdown. The third facility's representative was unwilling to provide any reason for the shutdown other than it was because they are no longer making rocket engines. The property was sold for development. The fourth facility shut down and filed for bankruptcy. Again, staff attempted to contact the owners, but were unable to obtain further clarification regarding the reason for shutdown. These shutdowns led to a loss of 29 manufacturing jobs and 38 non-manufacturing jobs according to the submitted APEP reports. However, none of the Compliance Year 2014 job losses were attributed to RECLAIM (refer to Appendix E). None of the operating RECLAIM facilities attributed job gains or losses to RECLAIM for Compliance Year 2014.

The analysis in this report only considers job gains and losses at RECLAIM facilities. It should be noted that this analysis of socioeconomic impacts based on APEP reports and follow-up interviews is focused exclusively on changes in employment that occurred at RECLAIM facilities. The effect of the program on the local economy outside of RECLAIM facilities, including consulting and source testing jobs, is not considered.

It is not possible to compare the impact of the RECLAIM program on the job market *vis-à-vis* a scenario without RECLAIM. This is because factors other than RECLAIM (*e.g.*, the prevailing economic climate), also impact the job market.

Furthermore, there is no way to directly compare job impacts attributed to RECLAIM to job impacts attributed to command-and-control rules that would have been adopted in RECLAIM's absence, because these command-andcontrol rules do not exist for these facilities. As mentioned previously, the effect of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) is also not considered in this report.

CHAPTER 7 AIR QUALITY AND PUBLIC HEALTH IMPACTS

Summary

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. Compliance Year 2014 NOx emissions increased 1.7% relative to Compliance Year 2013, and Compliance Year 2014 SOx emissions were 5.3% more than the previous year. Quarterly calendar year 2014 NOx emissions fluctuated within 6 percent of the mean NOx emissions for the year. Quarterly calendar year 2014 SOx emissions fluctuated within 11 percent of the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season for either pollutant.

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone, relative to a baseline averaged over three years (1986 through 1988), by December 31, 2000. The Basin achieved the December 2000 target for ozone well before the deadline. In calendar year 2014, the per capita exposure to ozone (the average length of time each person is exposed) continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and fine particulates, such as metals. RECLAIM facilities are subject to the same air toxic, VOC, and particulate matter regulations as other sources in the Basin. All sources are subject, where applicable, to the NSR rule for toxics (Rule 1401 and/or Rule 1401.1). In addition, new or modified sources with NOx or SOx emission increases are required to be equipped with BACT, which minimizes to the extent feasible the increase of NOx and SOx emissions. RECLAIM and non-RECLAIM facilities that emit toxic air contaminants are required to report those emissions to SCAQMD. Those emissions reports are used to identify candidates for the Toxics Hot Spots program (AB2588). This program requires emission inventories and, depending on the type and amount of emissions, facilities may be required to do public notice and/or prepare and implement a plan to reduce emissions. There is no evidence that RECLAIM has caused or allowed higher toxic risk in areas adjacent to RECLAIM facilities.

Background

RECLAIM is designed to achieve the same, or higher level of, air quality and public health benefits as would have been achieved from implementation of the control measures and command-and-control rules that RECLAIM subsumed. Therefore, as a part of each annual program audit, SCAQMD staff evaluates per capita exposure to air pollution, toxic risk reductions, emission trends, and seasonal fluctuations in emissions. SCAQMD staff also generates quarterly emissions maps depicting the geographic distribution of RECLAIM emissions. These maps are generated and posted quarterly on SCAQMD's website¹, and

¹ The quarterly emission maps can be found at: <u>http://www.aqmd.gov/home/programs/business/about-reclaim/quarterly-emission-maps</u>.

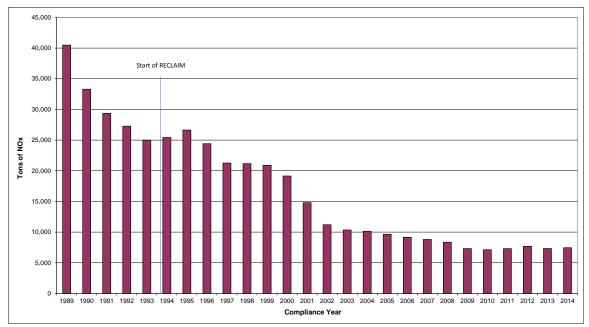
include all the quarterly emissions maps presented in previous annual program audit reports. This chapter addresses:

- Emission trends for RECLAIM facilities;
- Seasonal fluctuations in emissions;
- Per capita exposure to air pollution; and
- Toxics impacts.

Emission Trends for RECLAIM Sources

Concerns were expressed during program development that RECLAIM might cause sources to increase their aggregate emissions during the early years of the program due to perceived over-allocation of emissions. As depicted in Figures 7-1 and 7-2, which show NOx and SOx emissions from RECLAIM sources indicates that overall, RECLAIM emissions have been in a downward trend since program inception, and the emission increases during early years of RECLAIM that were anticipated by some did not materialize.

Figure 7-1 NOx Emission Trend for RECLAIM Sources



Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 NOx universe.

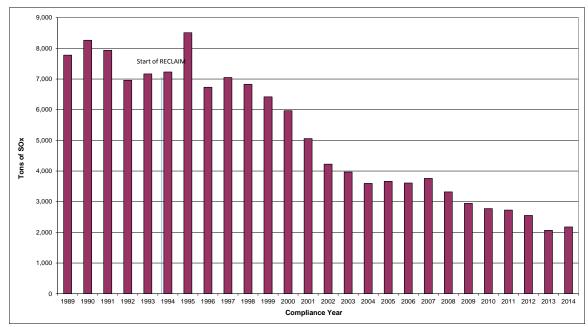


Figure 7-2 SOx Emission Trend for RECLAIM Sources

Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 SOx universe.

NOx emissions decreased every year from Compliance Year 1995 through Compliance Year 2009, and the emissions from Compliance Year 2009 to Compliance Year 2014 have fluctuated within a narrow range (7,121 - 7,691ton/yr, or < $\pm 4\%$ of the mid point). As shown in Table 3-2 and Figure 3-1, these emission levels are much lower than the programmatic goals. Since Compliance Year 1995, annual SOx emissions have also followed a general downward trend, except for slight increases in Compliance Years 1997, 2005, 2007, and now in 2014 compared to each respective previous compliance year.

The increase in NOx and SOx emissions from Compliance Year 1994 to 1995 can be attributed to the application of MDP at the onset of RECLAIM implementation. RECLAIM provides for emissions from each major source's first year in the program to be quantified using an emission factor and fuel throughput (interim reporting) while they certify their CEMS. However, at the beginning of the program (Compliance Year 1994), many facilities had difficulties certifying their CEMS within this time frame, and consequently reported their Compliance Year 1995 emissions using MDP. As discussed in Chapter 5, since CEMS for these major sources had no prior data, MDP required the application of the most conservative procedure to calculate substitute data. As a result, the application of MDP during this time period yielded substitute data that may have been much higher than the actual emissions. In addition, emissions after Compliance Year 1995 decreased steadily through 2000. Thus, RECLAIM facilities did not increase their actual aggregate emissions during the early years of the program.

Seasonal Fluctuation in Emissions for RECLAIM Sources

Another concern during program development was that RECLAIM might cause facilities to shift emissions from the winter season into the summer ozone season and exacerbate poor summer air quality since RECLAIM emission goals are structured on an annual basis. To address this concern, "seasonal fluctuations" were added as part of the analysis required by Rule 2015. Accordingly, SCAQMD staff performed a two-part analysis of the quarterly variation in RECLAIM emissions:

- In the first part, staff qualitatively compared the quarterly variation in Compliance Year 2014 RECLAIM emissions to the quarterly variation in emissions from the RECLAIM universe prior to the implementation of RECLAIM.
- In the second part, staff analyzed quarterly audited emissions during calendar year 2014 and compared them with quarterly audited emissions for prior years to assess if there had been such a shift in emissions. This analysis is reflected in Figures 7-3 through 7-6.²

Quarterly emissions data from the facilities in RECLAIM before they were in the program is not available. Therefore, a quantitative comparison of the seasonal variation of emissions from these facilities while operating under RECLAIM with their seasonal emissions variation prior to RECLAIM is not feasible. However, a qualitative comparison has been conducted, as follows:

- NOx emissions from RECLAIM facilities are dominated by refineries and power plants.
- SOx emissions from RECLAIM facilities are especially dominated by refineries.
- Prior to RECLAIM, refinery production was generally highest in the summer months because more people travel during summer; thus, increasing demand for gasoline and other transportation fuels.
- Electricity generation prior to RECLAIM was generally highest in the summer months because of increased demand for electricity to drive air conditioning units.

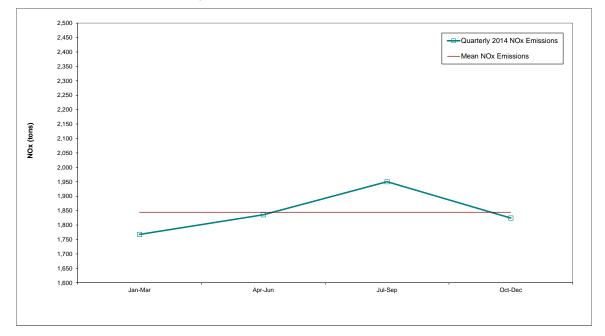
Emissions from refineries (NOx and SOx) and from power plants (NOx) are typically higher in the summer months, which was the trend prior to implementation of RECLAIM for the reasons described above. Therefore, provided a year's summer quarter RECLAIM emissions do not exceed that year's quarterly average emissions by a substantial amount, it can be concluded that, for that year, RECLAIM has not resulted in a shift of emissions to the summer months relative to the pre-RECLAIM emission pattern.

Figure 7-3 shows the 2014 mean quarterly NOx emission level, which is the average of the aggregate audited emissions for each of the four quarters, and the 2014 audited quarterly emissions. Figure 7-4 compares the 2014 quarterly NOx emissions with the quarterly emissions from 2003 through 2013. During calendar year 2014, quarterly NOx emissions varied from 4 percent below the mean in the

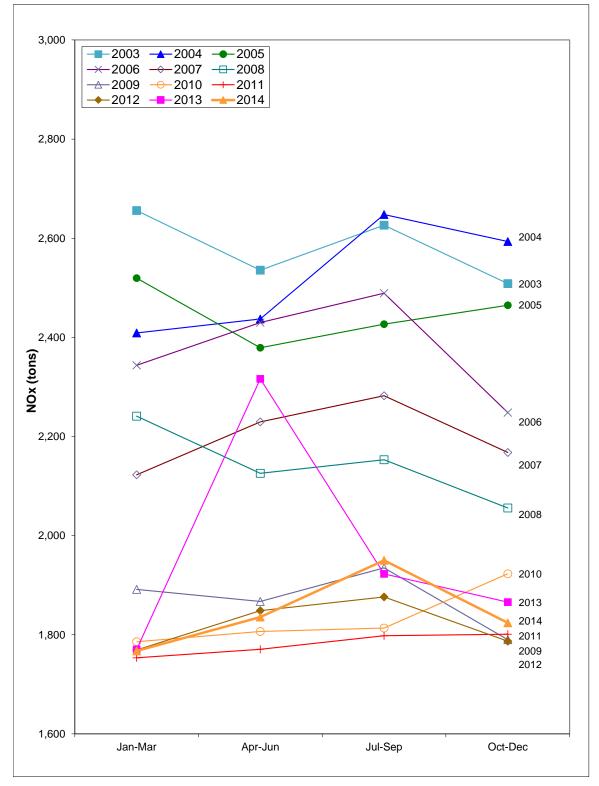
² Data used to generate these figures were derived from audited data. Similar figures for calendar years 1994 through 2007 in previous annual reports were generated from a combination of audited and reported data available at the time the reports were written.

first quarter (January through March) to about 6 percent above the mean in the third quarter (July through September). Figure 7-4 shows that the calendar year 2014 quarterly emissions profile is consistent with previous years under RECLAIM, with calendar year 2013 being the only notable exception. Figures 7-3 and 7-4, along with the qualitative analysis performed above, show that in calendar year 2014 there has not been a significant shift in NOx emissions from the winter months to the summer months.

Figure 7-3 Calendar Year 2014 NOx Quarterly Emissions

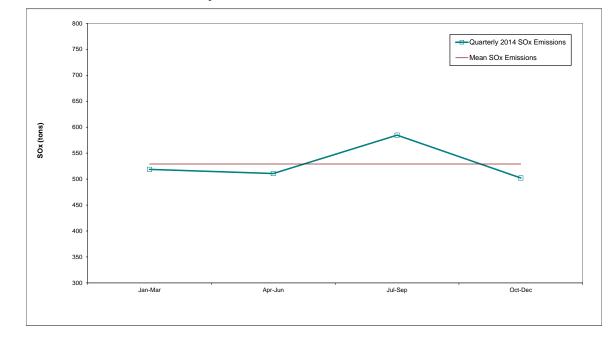






Similar to Figure 7-3 and 7-4 for NOx quarterly emissions, Figure 7-5 presents the 2014 mean quarterly SOx emissions and the 2014 audited quarterly emissions, while Figure 7-6 compares the 2014 quarterly SOx emissions with the quarterly emissions from 2003 through 2013. Figure 7-5 shows that quarterly SOx emissions during calendar year 2014 varied from about 11 percent above the mean in the third quarter (July to September) to 5 percent below the mean in the fourth quarter (October through December). Figure 7-6 shows that the calendar year 2014 quarterly emissions profile is roughly consistent with previous years under RECLAIM. Both Figures 7-5 and 7-6, along with the qualitative analysis performed above, show that in calendar year 2014 there was not a significant shift in SOx emissions from the winter months to the summer months.

Figure 7-5 Calendar Year 2014 SOx Quarterly Emissions



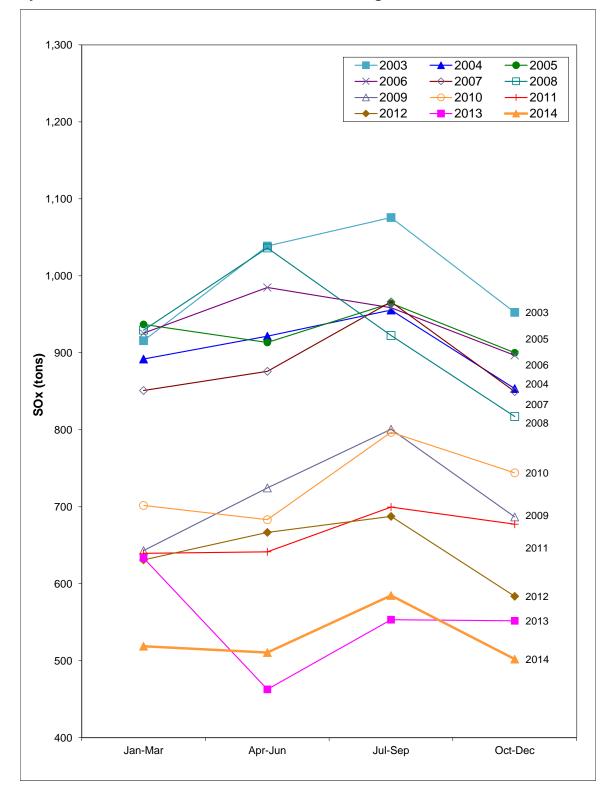


Figure 7-6 Quarterly SOx Emissions from Calendar Years 2003 through 2014

Per Capita Exposure to Pollution

The predicted effects of RECLAIM on air quality and public health were thoroughly analyzed through modeling during program development. The results were compared to the projected impacts from continuing traditional commandand-control regulations and to implementing control measures in the 1991 AQMP. One of the criteria examined in the analysis was per capita population exposure.

Per capita population exposure reflects the length of time each person is exposed to unhealthful air quality. The modeling performed in the program development analysis projected that the reductions in per capita exposure under RECLAIM in calendar year 1994 would be nearly identical to the reductions projected for implementation of the control measures in the 1991 AQMP, and the reductions resulting from RECLAIM would be greater in calendar years 1997 and 2000. As reported in previous annual reports, actual per capita exposures to ozone for 1994 and 1997 were below the projections.

As part of the Children's Environmental Health Protection Act that was passed in 1999, and in consultation with the OEHHA, CARB is to "review all existing healthbased ambient air quality standards to determine whether these standards protect public health, including infants and children, with an adequate margin of safety." As a result of that requirement, CARB adopted a new 8-hour ozone standard (0.070 ppm), which became effective May 17, 2006, in addition to the 1-hour ozone standard (0.09 ppm) already in place. Table 7-1 shows the number of days that both the new state 8-hour ozone standard of 0.070 ppm and the 1-hour standard of 0.09 ppm were exceeded.

In July 1997, the USEPA established a new ozone National Ambient Air Quality Standard (NAAQS) of 0.085 ppm based on an 8-hour average measurement. As part of the Phase I implementation that was finalized in June 2004, the federal 1-hour ozone standard (0.12 ppm) was revoked effective June 2005. Effective May 27, 2008, the 8-hour NAAQS for ozone was reduced to 0.075 ppm. Table 7-1 shows monitoring results based on this revised 8-hour federal standard. As of December 28, 2015, the 8-hour NAAQS for ozone has been further reduced to 0.070 ppm, the level of the current California Ambient Air Quality Standard. Table 7-1 shows that the Basin exceeded the federal 8-hour 0.07 ppm standard 113 days and the state 0.07 ppm standard 116 days in 2015. The number of days of exceedance of the federal and state standards differ even though the standards are numerically equal due to differing language and methods for deriving exceedance days in the federal and state rules.

Table 7-1 summarizes ozone data for calendar years 2001 through 2015 in terms of the number of days that exceeded the state's 1-hour and 8-hour ozone standards, the 2008 and 2015 federal ambient 8-hour ozone standard, and both the Basin's maximum 1-hour and 8-hour ozone concentrations in each calendar year. This table shows that the number of days that exceeded the 1-hour state and 8-hour federal ambient ozone standards in calendar year 2015 were the lowest since calendar year 2001. The Basin's maximum ozone concentrations were very close to the lowest levels since 2001, based on both the 1-hour and 8-hour averaging periods.

Table 7-1	
Summary of Ozone Da	ata

Year	Days exceeding state 1-hour standard (0.09 ppm)	Days exceeding state 8-hour standard (0.07 ppm)	Days exceeding old federal 8-hour standard (0.075 ppm)	Days exceeding new federal 8-hour standard (0.07 ppm)	Basin Maximum 1-hour ozone concentration (ppm)	Basin Maximum 8-hour ozone concentration (ppm)
2001	121	156	132	N/A	0.191	0.146
2002	118	149	135	N/A	0.169	0.148
2003	133	161	141	N/A	0.216	0.200
2004	110	161	126	N/A	0.163	0.148
2005	111	142	116	N/A	0.163	0.145
2006	102	121	114	N/A	0.175	0.142
2007	99	128	108	N/A	0.171	0.137
2008	98	136	121	N/A	0.176	0.131
2009	100	131	113	N/A	0.176	0.128
2010	83	128	109	N/A	0.143	0.123
2011	94	127	107	N/A	0.160	0.136
2012	97	140	111	N/A	0.147	0.112
2013	92	123	106	N/A	0.151	0.122
2014	76	134	93	N/A	0.142	0.114
2015	72	116	83	113	0.144	0.127

The CCAA, which was enacted in 1988, established targets for reducing overall population exposure to severe non-attainment pollutants in the Basin—a 25% reduction by December 31, 1994, a 40% reduction by December 31, 1997, and a 50% reduction by December 31, 2000 relative to a calendar years 1986-88 baseline. These targets are based on the average number of hours a person is exposed ("per capita exposure"³) to ozone concentrations above the state 1-hour standard of 0.09 ppm. Table 7-2 shows the 1986-88 baseline per capita exposure, the actual per capita exposures each year since 1994 (RECLAIM's initial year), and the 1997 and 2000 targets set by the CCAA for each of the four counties in the district and the Basin overall. As shown in Table 7-2, the CCAA reduction targets were achieved as early as 1994 (actual 1994 Basin per capita exposure was 37.6 hours, which is below the 2000 target of 40.2 hours). The per capita exposure continues to remain much lower than the CCAA targets. For calendar year 2015, the actual per capita exposure for the Basin was 1.96 hours, which represents a 97.6% reduction from the 1986-88 baseline level.

³ SCAQMD staff divides the air basin into a grid of square cells and interpolates recorded ozone data from ambient air quality monitors to determine ozone levels experienced in each of these cells. The total person-hours in a county experiencing ozone higher than the state ozone standard is determined by summing over the whole county the products of the number of hours exceeding the state ozone standard per grid cell with the number of residents in the corresponding cell. The per capita ozone exposures are then calculated by dividing the sum of person-hours by the total population within a county. Similar calculations are used to determine the Basin-wide per capita exposure by summing and dividing over the whole Basin.

Calendar Year	Basin	Los Angeles	Orange	Riverside	San Bernardino
1986-88 baseline ¹	80.5	75.8	27.2	94.1	192.6
1994 actual	37.6	26.5	9	71.1	124.9
1995 actual	27.7	20	5.7	48.8	91.9
1996 actual	20.3	13.2	4	42.8	70
1997 actual	5.9	3	0.6	13.9	24.5
1998 actual	12.1	7.9	3.1	25.2	40.2
2000 actual	3.8	2.6	0.7	8.5	11.4
2001 actual	1.73	0.88	0.15	6	5.68
2002 actual	3.87	2.16	0.13	11.12	12.59
2003 actual	10.92	6.3	0.88	20.98	40.21
2004 actual	3.68	2.26	0.50	6.82	12.34
2005 actual	3.11	1.43	0.03	6.06	12.54
2006 actual	4.56	3.08	0.68	8.02	13.30
2007 actual	2.90	1.50	0.35	4.65	10.53
2008 actual	4.14	2.04	0.26	7.50	14.71
2009 actual	2.872	1.538	0.078	3.884	10.539
2010 actual	1.184	0.377	0.107	2.451	4.476
2011 actual	2.099	0.848	0.015	3.456	8.125
2012 actual	2.366	1.050	0.050	2.587	9.776
2013 actual	1.314	0.519	0.067	1.609	5.497
2014 actual	1.837	1.263	0.293	1.472	6.022
2015 actual	1.962	0.760	0.101	2.135	8.473
1997 target ²	48.3	45.5	16.3	56.5	115.6
2000 target ³	40.2	37.9	13.6	47	96.3

Table 7-2	
Per Capita Exposure to Ozone above the State One-Hour Standard of 0.09 ppm (hours)	

¹ Average over three years, 1986 through 1988.

² 60% of the 1986-88 baseline exposures.

³ 50% of the 1986-88 baseline exposures.

Table 7-2 shows that actual per capita exposures during all the years mentioned were well under the 1997 and 2000 target exposures limits. It should also be noted that air quality in the Basin is a complex function of meteorological conditions and an array of different emission sources, including mobile, area, RECLAIM stationary sources, and non-RECLAIM stationary sources. Therefore, the reduction of per capita exposure beyond the projected level is not necessarily wholly attributable to implementation of the RECLAIM program in lieu of the command-and-control regulations.

Toxic Impacts

Based on a comprehensive toxic impact analysis performed during program development, it was concluded that RECLAIM would not result in any significant impacts on air toxic emissions. Nevertheless, to ensure that the implementation of RECLAIM does not result in adverse toxic impacts, each annual program audit is required to assess any increase in the public health exposure to air toxics potentially caused by RECLAIM.

One of the safeguards to ensure that the implementation of RECLAIM does not result in adverse air toxic health impacts is that RECLAIM sources are subject to

the same air toxic statutes and regulations (*e.g.*, SCAQMD Regulation XIV, State AB 2588, State Air Toxics Control Measures, Federal National Emissions Standards for Hazardous Air Pollutants, etc.) as other sources in the Basin. Additionally, air toxic health risk is primarily caused by emissions of VOCs and fine particulates such as certain metals. VOC sources at RECLAIM facilities are subject to source-specific command-and-control rules the same way as are non-RECLAIM facilities, in addition to the toxics requirements described above. Sources of fine particulates and toxic metal emissions are also subject to the above-identified regulations pertaining to toxic emission. Moreover, new or modified RECLAIM sources with NOx or SOx emission increases are also required to be equipped with BACT, which minimizes to the extent feasible NOx and SOx emissions, which are precursors to particulate matter.

There have been concerns raised that trading RTCs could allow for higher production at a RECLAIM facility, which may indirectly cause higher emissions of toxic air contaminants, and thereby make the health risk in the vicinity of the facility worse. Other SCAQMD rules and programs for toxic air contaminants apply to facilities regardless of them being in RECLAIM or under traditional command and control rules. Emission increases at permit units are subject to new source review. RECLAIM facilities must also comply with any applicable Regulation XIV rules for toxics. Permits generally include limiting throughput conditions for new source review or applicable source specific rules. AB2588 and Rule 1402 could also be triggered based on risk, which would require the facility to take appropriate risk reduction measures.

Under the AER program, facilities that emit either: 1) four tons per year or more of VOC, NOx, SOx, or PM, or 100 tons per year or more of CO; or 2) any one of 24 toxic air contaminants (TACs) and ozone depleting compounds (ODCs) emitted above specific thresholds (Rule 301 Table IV), are required to report their emissions annually to SCAQMD. Beginning with the FY 2000-01 reporting cycle, toxics emission reporting for the AB2588 Program was incorporated into SCAQMD's AER Program. The data collected in the AER program is used to determine which facilities will be required to take further actions under the AB2588 Hot Spots Program.

Facilities in the AB2588 Program are required to submit a comprehensive toxics inventory, which is then prioritized using Board-approved procedures⁴ into one of three categories: low, intermediate, or high priority. Facilities ranked with low priority are exempt from future reporting. Facilities ranked with intermediate priority are classified as District tracking facilities, which are then required to submit a complete toxics inventory once every four years. In addition to reporting their toxic emissions quadrennially, facilities designated as high priority are required to submit a health risk assessment (HRA) to determine their impacts to the surrounding community.

According to SCAQMD's 2014 Annual Report on the AB2588 Air Toxics "Hot Spots" program⁵, staff has reviewed and approved 335 facility HRAs as of the end calendar year 2014. About 95 percent of the facilities have cancer risks

⁴ The toxics prioritization procedures can be found at: <u>http://www.aqmd.gov/home/regulations/compliance/</u> <u>toxic-hot-spots-ab-2588</u>

⁵ The 2014 AB2588 Annual Report can be found at: <u>http://www.aqmd.gov/docs/default-source/planning/</u> <u>risk-assessment/annual report 2014.pdf</u>

below 10 in a million and 97 percent of the facilities have acute and chronic noncancer hazard indices less than 1. Facilities with cancer risks above 10 in a million or a non-cancer hazard index above 1 are required to issue public notices informing the community. A public meeting is held during which SCAQMD discusses the health risks from the facility. SCAQMD has conducted such public notification meetings for 50 facilities under the AB2588 Program.

The Board has also established the following action risk levels in Rule 1402 – Control of Toxic Air Contaminants from Existing Sources: a cancer burden of 0.5, a cancer risk of 25 in a million, and a hazard index of 3.0. Facilities above any of the action risk levels must reduce their risks below the action risk levels within three years. To date, 24 facilities have been required to reduce risks and all of these facilities have reduced risks well below the action risk levels mandated by Rule 1402.

The impact of the above rules and measures are analyzed in Multiple Air Toxic Exposure Studies (MATES), which SCAQMD staff conducts periodically to assess cumulative air toxic impacts to the residents and workers of southern California. The fourth version of MATES (*i.e.*, MATES IV) was conducted over a one year period from July 2012 to June 2013, and the final MATES IV report was released on May 1, 2015⁶. Monitoring conducted at that time indicated that the basin-wide population-weighted air toxics exposure was reduced by 57 percent since MATES III (conducted from April 2004 to March 2006). The results of these recent MATES studies continue to show that the region-wide cumulative air toxic impacts on residents and workers in southern California have been declining. Therefore, staff has not found any evidence that would suggest that the substitution of NOx and SOx RECLAIM for the command-and-control rules and the measures RECLAIM subsumes caused a significant increase in public exposure to air toxic emissions relative to what would have happened if the RECLAIM program was not implemented. Staff will continue to monitor and assess toxic impacts as part of future annual program audits.

⁶ The Final MATES IV Report can be found at: <u>http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv/final-draft-report-4-1-15.pdf</u>

APPENDIX A RECLAIM UNIVERSE OF SOURCES

The RECLAIM universe of active sources as of the end of Compliance Year 2014 is provided below.

Facility ID	Cycle	Facility Name	Program
800088	2	3M COMPANY	NOx
23752	2	AEROCRAFT HEAT TREATING CO INC	NOx
115394	1	AES ALAMITOS, LLC	NOx
115389	2	AES HUNTINGTON BEACH, LLC	NOx/SOx
115536	1	AES REDONDO BEACH, LLC	NOx
148236	2	AIR LIQUIDE LARGE INDUSTRIES U.S., LP	NOx/SOx
3417	1	AIR PROD & CHEM INC	NOx
101656	2	AIR PRODUCTS AND CHEMICALS, INC.	NOx
5998	1	ALL AMERICAN ASPHALT	NOx
114264	1	ALL AMERICAN ASPHALT	NOx
3704	2	ALL AMERICAN ASPHALT, UNIT NO.01	NOx
800196	2	AMERICAN AIRLINES INC	NOx
145836	2	AMERICAN APPAREL DYEING & FINISHING, INC	NOx
156722	1	AMERICAN APPAREL KNIT AND DYE	NOx
21598	2	ANGELICA TEXTILE SERVICES	NOx
74424	2	ANGELICA TEXTILE SERVICES	NOx
16642	1	ANHEUSER-BUSCH LLC., (LA BREWERY)	NOx/SOx
117140	2	AOC, LLC	NOx
124619	1	ARDAGH METAL PACKAGING USA INC.	NOx
167066	1	ARLON GRAPHICS L.L.C.	NOx
174406	1	ARLON GRAPHICS LLC	NOx
12155	1	ARMSTRONG WORLD INDUSTRIES INC	NOx
122666	2	A'S MATCH DYEING & FINISHING	NOx
117290	2	B BRAUN MEDICAL, INC	NOx
800016	2	BAKER COMMODITIES INC	NOx
800205	2	BANK OF AMERICA NT & SA, BREA CENTER	NOx
40034	1	BENTLEY PRINCE STREET INC	NOx
119907	1	BERRY PETROLEUM COMPANY	NOx
166073	1	BETA OFFSHORE	NOx
155474	2	BICENT (CALIFORNIA) MALBURG LLC	NOx

Facility ID	Cycle	Facility Name	Program
132068	1	BIMBO BAKERIES USA INC	NOx
1073	1	BORAL ROOFING LLC	NOx
174544	2	BREITBURN OPERATING LP	NOx
25638	2	BURBANK CITY, BURBANK WATER & POWER	NOx
128243	1	BURBANK CITY, BURBANK WATER & POWER, SCPPA	NOx
800344	1	CALIFORNIA AIR NATIONAL GUARD, MARCH AFB	NOx
22607	2	CALIFORNIA DAIRIES, INC	NOx
138568	1	CALIFORNIA DROP FORGE, INC	NOx
800181	2	CALIFORNIA PORTLAND CEMENT CO	NOx/SOx
46268	1	CALIFORNIA STEEL INDUSTRIES INC	NOx
107653	2	CALMAT CO	NOx
107654	2	CALMAT CO	NOx
107655	2	CALMAT CO	NOx
107656	2	CALMAT CO	NOx
119104	1	CALMAT CO	NOx/SOx
153992	1	CANYON POWER PLANT	NOx
94930	1	CARGILL INC	NOx
22911	2	CARLTON FORGE WORKS	NOx
118406	1	CARSON COGENERATION COMPANY	NOx
141555	2	CASTAIC CLAY PRODUCTS, LLC	NOx
14944	1	CENTRAL WIRE, INC.	NOx/SOx
42676	2	CES PLACERITA INC	NOx
148925	1	CHERRY AEROSPACE	NOx
800030	2	CHEVRON PRODUCTS CO.	NOx/SOx
56940	1	CITY OF ANAHEIM/COMB TURBINE GEN STATION	NOx
172077	1	CITY OF COLTON	NOx
129810	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
139796	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
164204	2	CITY OF RIVERSIDE, PUBLIC UTILITIES DEPT	NOx
16978	2	CLOUGHERTY PACKING LLC/HORMEL FOODS CORP	NOx
38440	2	COOPER & BRAIN - BREA	NOx
68042	2	CORONA ENERGY PARTNERS, LTD	NOx
152707	1	CPV SENTINEL LLC	NOx
50098	1	D&D DISPOSAL INC, WEST COAST RENDERING CO	NOx
63180	1	DARLING INGREDIENTS INC.	NOx
3721	2	DART CONTAINER CORP OF CALIFORNIA	NOx

Facility ID	Cycle	Facility Name	Program
7411	2	DAVIS WIRE CORP	NOx
143738	2	DCOR LLC	NOx
143739	2	DCOR LLC	NOx
143740	2	DCOR LLC	NOx
143741	1	DCOR LLC	NOx
132071	1	DEAN FOODS CO. OF CALIFORNIA	NOx
47771	1	DELEO CLAY TILE CO INC	NOx
800037	2	DEMENNO/KERDOON	NOx
125579	1	DIRECTV	NOx
800189	1	DISNEYLAND RESORT	NOx
174371	2	DP3 HANGARS, LLC	NOx
142536	2	DRS SENSORS & TARGETING SYSTEMS, INC	NOx
178639	1	ECO SERVICES OPERATIONS LLC	NOx/SOx
800264	2	EDGINGTON OIL COMPANY	NOx/SOx
115663	1	EL SEGUNDO POWER, LLC	NOx
800372	2	EQUILON ENTER. LLC, SHELL OIL PROD. US	NOx/SOx
124838	1	EXIDE TECHNOLOGIES	NOx/SOx
17344	1	EXXONMOBIL OIL CORP	NOx
25058	2	EXXONMOBIL OIL CORP	NOx
800089	1	EXXONMOBIL OIL CORPORATION	NOx/SOx
800094	1	EXXONMOBIL OIL CORPORATION	NOx
95212	1	FABRICA	NOx
11716	1	FONTANA PAPER MILLS INC	NOx
175154	2	FREEPORT-MCMORAN OIL & GAS	NOx
175191	1	FREEPORT-MCMORAN OIL & GAS	NOx
346	1	FRITO-LAY, INC.	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx
142267	2	FS PRECISION TECH LLC	NOx
5814	1	GAINEY CERAMICS INC	NOx
153033	2	GEORGIA-PACIFIC CORRUGATED LLC	NOx
176934	1	GI TC IMPERIAL HIGHWAY, LLC	NOx
124723	1	GREKA OIL & GAS, INC	NOx
137471	2	GRIFOLS BIOLOGICALS INC	NOx
156741	2	HARBOR COGENERATION CO, LLC	NOx
157359	1	HENKEL ELECTRONIC MATERIALS, LLC	NOx
123774	1	HERAEUS PRECIOUS METALS NO. AMERICA, LLC	NOx

Facility ID	Cycle	Facility Name	Program
113160	2	HILTON COSTA MESA	NOx
800066	1	HITCO CARBON COMPOSITES INC	NOx
2912	2	HOLLIDAY ROCK CO INC	NOx
800003	2	HONEYWELL INTERNATIONAL INC	NOx
124808	2	INEOS POLYPROPYLENE LLC	NOx/SOx
129816	2	INLAND EMPIRE ENERGY CENTER, LLC	NOx
157363	2	INTERNATIONAL PAPER CO	NOx
169678	1	ITT CANNON, LLC	NOx
16338	1	KAISER ALUMINUM FABRICATED PRODUCTS, LLC	NOx
21887	2	KIMBERLY-CLARK WORLDWIDE INCFULT. MILL	NOx/SOx
1744	2	KIRKHILL - TA COMPANY	NOx
36909	2	LA CITY, DEPARTMENT OF AIRPORTS	NOx
800335	2	LA CITY, DEPT OF AIRPORTS	NOx
800170	1	LA CITY, DWP HARBOR GENERATING STATION	NOx
800074	1	LA CITY, DWP HAYNES GENERATING STATION	NOx
800075	1	LA CITY, DWP SCATTERGOOD GENERATING STN	NOx
800193	2	LA CITY, DWP VALLEY GENERATING STATION	NOx
61962	1	LA CITY, HARBOR DEPT	NOx
550	1	LA CO., INTERNAL SERVICE DEPT	NOx
173904	2	LAPEYRE INDUSTRIAL SANDS, INC	NOx
141295	2	LEKOS DYE AND FINISHING, INC	NOx
144455	2	LIFOAM INDUSTRIES, LLC	NOx
83102	2	LIGHT METALS INC	NOx
151394	2	LINN OPERATING INC	NOx
151532	2	LINN OPERATING, INC	NOx
152054	1	LINN WESTERN OPERATING INC	NOx
151415	2	LINN WESTERN OPERATING, INC	NOx
115314	2	LONG BEACH GENERATION, LLC	NOx
17623	2	LOS ANGELES ATHLETIC CLUB	NOx
58622	2	LOS ANGELES COLD STORAGE CO	NOx
125015	2	LOS ANGELES TIMES COMMUNICATIONS LLC	NOx
800080	2	LUNDAY-THAGARD COMPANY	NOx/SOx
38872	1	MARS PETCARE U.S., INC.	NOx
14049	2	MARUCHAN INC	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx
2825	1	MCP FOODS INC	NOx

MARCH 2016

Facility ID	Cycle	Facility Name	Program
173290	1	MEDICLEAN	NOx
94872	2	METAL CONTAINER CORP	NOx
155877	1	MILLERCOORS, LLC	NOx
12372	1	MISSION CLAY PRODUCTS	NOx
11887	2	NASA JET PROPULSION LAB	NOx
115563	1	NCI GROUP INC., DBA, METAL COATERS OF CA	NOx
40483	2	NELCO PROD. INC	NOx
172005	2	NEW- INDY ONTARIO, LLC	NOx
12428	2	NEW NGC, INC.	NOx
131732	2	NEWPORT FAB, LLC	NOx
18294	1	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	NOx
800408	1	NORTHROP GRUMMAN SYSTEMS	NOx
800409	2	NORTHROP GRUMMAN SYSTEMS CORPORATION	NOx
112853	2	NP COGEN INC	NOx
115315	1	NRG CALIFORNIA SOUTH LP, ETIWANDA GEN ST	NOx
89248	2	OLD COUNTRY MILLWORK INC	NOx
47781	1	OLS ENERGY-CHINO	NOx
35302	2	OWENS CORNING ROOFING AND ASPHALT, LLC	NOx/SOx
7427	1	OWENS-BROCKWAY GLASS CONTAINER INC	NOx/SOx
169754	1	OXY USA INC	NOx
151594	1	OXY USA, INC	NOx
151601	1	OXY USA, INC.	NOx
45746	2	PABCO BLDG PRODUCTS LLC, PABCO PAPER, DBA	NOx/SOx
17953	1	PACIFIC CLAY PRODUCTS INC	NOx
59618	1	PACIFIC CONTINENTAL TEXTILES, INC.	NOx
2946	1	PACIFIC FORGE INC	NOx
130211	2	PAPER-PAK INDUSTRIES	NOx
800183	1	PARAMOUNT PETR CORP	NOx/SOx
800168	1	PASADENA CITY, DWP	NOx
168088	1	PCCR USA	NOx
171107	2	PHILLIPS 66 CO/LA REFINERY WILMINGTON PL	NOx/SOx
171109	1	PHILLIPS 66 COMPANY/LOS ANGELES REFINERY	NOx/SOx
137520	1	PLAINS WEST COAST TERMINALS LLC	NOx
800416	1	PLAINS WEST COAST TERMINALS LLC	NOx
800417	2	PLAINS WEST COAST TERMINALS LLC	NOx
800419	2	PLAINS WEST COAST TERMINALS LLC	NOx

Facility ID	Cycle	Facility Name	Program
800420	2	PLAINS WEST COAST TERMINALS LLC	NOx
176708	2	POMONA POWER GENERATION LLC	NOx
11435	2	PQ CORPORATION	NOx/SOx
7416	1	PRAXAIR INC	NOx
42630	1	PRAXAIR INC	NOx
152501	1	PRECISION SPECIALTY METALS, INC.	NOx
136	2	PRESS FORGE CO	NOx
105903	1	PRIME WHEEL	NOx
132191	1	PURENERGY OPERATING SERVICES, LLC	NOx
132192	1	PURENERGY OPERATING SERVICES, LLC	NOx
173392	1	QUAD/GRAPHICS MARKETING, LLC	NOx
8547	1	QUEMETCO INC	NOx/SOx
19167	2	R J. NOBLE COMPANY	NOx
3585	2	R. R. DONNELLEY & SONS CO, LA MFG DIV	NOx
20604	2	RALPHS GROCERY CO	NOx
115041	1	RAYTHEON COMPANY	NOx
114997	1	RAYTHEON COMPANY	NOx
115172	2	RAYTHEON COMPANY	NOx
800371	2	RAYTHEON SYSTEMS COMPANY - FULLERTON OPS	NOx
20203	2	RECONSERVE OF CALIFORNIA-LOS ANGELES INC	NOx
15544	2	REICHHOLD INC	NOx
52517	1	REXAM BEVERAGE CAN COMPANY	NOx
61722	2	RICOH ELECTRONICS INC	NOx
800182	1	RIVERSIDE CEMENT CO	NOx/SOx
800113	2	ROHR, INC.	NOx
18455	2	ROYALTY CARPET MILLS INC	NOx
4242	2	SAN DIEGO GAS & ELECTRIC	NOx
161300	2	SAPA EXTRUDER, INC	NOx
155221	2	SAVE THE QUEEN LLC (DBA QUEEN MARY)	NOx
15504	2	SCHLOSSER FORGE COMPANY	NOx
14926	1	SEMPRA ENERGY (THE GAS CO)	NOx
800129	1	SFPP, L.P.	NOx
37603	1	SGL TECHNIC INC, POLYCARBON DIVISION	NOx
131850	2	SHAW DIVERSIFIED SERVICES INC	NOx
117227	2	SHCI SM BCH HOTEL LLC, LOEWS SM BCH HOTE	NOx
16639	1	SHULTZ STEEL CO	NOx

Facility ID	Cycle	Facility Name	Program
54402	2	SIERRA ALUMINUM COMPANY	NOx
85943	2	SIERRA ALUMINUM COMPANY	NOx
101977	1	SIGNAL HILL PETROLEUM INC	NOx
119596	2	SNAK KING CORPORATION	NOx
43201	2	SNOW SUMMIT INC	NOx
4477	1	SO CAL EDISON CO	NOx
5973	1	SO CAL GAS CO	NOx
800127	1	SO CAL GAS CO	NOx
800128	1	SO CAL GAS CO	NOx
8582	1	SO CAL GAS CO/PLAYA DEL REY STORAGE FACI	NOx
14871	2	SONOCO PRODUCTS CO	NOx
160437	1	SOUTHERN CALIFORNIA EDISON	NOx
800338	2	SPECIALTY PAPER MILLS INC	NOx
1634	2	STEELCASE INC, WESTERN DIV	NOx
126498	2	STEELSCAPE, INC	NOx
105277	2	SULLY MILLER CONTRACTING CO	NOx
19390	1	SULLY-MILLER CONTRACTING CO.	NOx
2083	1	SUPERIOR INDUSTRIES INTERNATIONAL INC	NOx
3968	1	TABC, INC	NOx
18931	2	ТАМСО	NOx/SOx
174591	1	TESORO REF & MKTG CO LLC,CALCINER	NOx/SOx
174655	2	TESORO REFINING & MARKETING CO, LLC	NOx/SOx
151798	1	TESORO REFINING AND MARKETING CO, LLC	NOx/SOx
800436	1	TESORO REFINING AND MARKETING CO, LLC	NOx/SOx
96587	1	TEXOLLINI INC	NOx
148340	2	THE BOEING COMPANY-BUILDING 800 COMPLEX	NOx
14736	2	THE BOEING COMPANY-SEAL BEACH COMPLEX	NOx
16660	2	THE BOEING COMPANY	NOx
115241	1	THE BOEING COMPANY	NOx
800067	1	THE BOEING COMPANY	NOx
800038	2	THE BOEING COMPANY - C17 PROGRAM	NOx
11119	1	THE GAS CO./ SEMPRA ENERGY	NOx
153199	1	THE KROGER CO/RALPHS GROCERY CO	NOx
97081	1	THE TERMO COMPANY	NOx
109914	1	THERMAL REMEDIATION SOLUTIONS, LLC	NOx
800330	1	THUMS LONG BEACH	NOx

Facility ID	Cycle	Facility Name	Program
129497	1	THUMS LONG BEACH CO	NOx
800325	2	TIDELANDS OIL PRODUCTION CO	NOx
68118	2	TIDELANDS OIL PRODUCTION COMPANY ETAL	NOx
171960	2	TIN, INC. DBA INTERNATIONAL PAPER	NOx
137508	2	TONOGA INC, TACONIC DBA	NOx
53729	1	TREND OFFSET PRINTING SERVICES, INC	NOx
165192	2	TRIUMPH AEROSTRUCTURES, LLC	NOx
43436	1	TST, INC.	NOx
800026	1	ULTRAMAR INC	NOx/SOx
9755	2	UNITED AIRLINES INC	NOx
73022	2	US AIRWAYS INC	NOx
800149	2	US BORAX INC	NOx
800150	1	US GOVT, AF DEPT, MARCH AIR RESERVE BASE	NOx
800393	1	VALERO WILMINGTON ASPHALT PLANT	NOx
9053	1	VEOLIA ENERGY LOS ANGELES, INC	NOx
11034	2	VEOLIA ENERGY LOS ANGELES, INC	NOx
14502	2	VERNON CITY, LIGHT & POWER DEPT	NOx
148896	2	CALIFORNIA RESOURCES PRODUCTION CORP	NOx
148897	2	CALIFORNIA RESOURCES PRODUCTION CORP	NOx
151899	2	CALIFORNIA RESOURCES PRODUCTION CORP	NOx
14495	2	VISTA METALS CORPORATION	NOx
146536	1	WALNUT CREEK ENERGY, LLC	NOx/SOx
42775	1	WEST NEWPORT OIL CO	NOx/SOx
17956	1	WESTERN METAL DECORATING CO	NOx
51620	1	WHEELABRATOR NORWALK ENERGY CO INC	NOx
127299	2	WILDFLOWER ENERGY LP/INDIGO GEN., LLC	NOx

APPENDIX B FACILITY INCLUSIONS

As discussed in Chapter 1, one facility was added to the RECLAIM universe in Compliance Year 2014. The included facility is identified below, and the reason for inclusion is also provided.

Facility ID	Cycle	Facility Name	Market	Date	Reason
109914	1	THERMAL REMEDIATION SOLUTIONS, LLC	NOx	4/1/2014	Reported emissions from permitted sources exceeded four tons NOx in a year

APPENDIX C RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

SCAQMD staff is aware of the following RECLAIM facilities that permanently shut down all operations, inactivated all their RECLAIM permits, or were excluded from the RECLAIM universe during Compliance Year 2014. The reasons for shutdowns and exclusions cited below are based on the information provided by the facilities and other information available to SCAQMD staff.

Facility ID Facility Name City and County SIC Pollutant(s) 1994 Allocation Reason for Shutdown	10094 Atlas Carpet Mills Inc. Commerce, Los Angeles County 2273 NOx 9,114 This company was sold and consolidated its operation with its parent company. Of two Atlas Carpet Mills' facilities, this facility was the dyehouse operation, which is no longer being used. The other facility, which provides finishing operations, is still in business.
Facility ID Facility Name City and County SIC Pollutant(s) 1994 Allocation Reason for Shutdown	90957 J Pacific Inc, Delta Dyeing & Finishing Los Angeles, Los Angeles County 2260 NOx 0 Facility president reported to SCAQMD inspector that the facility had shut down. Per inspector's report dated on 1/22/2015, all equipment was removed and the building was abandoned. Staff was unable to obtain further clarification regarding the facility shutdown.
Facility ID Facility Name City and County SIC Pollutant(s) 1994 Allocation Reason for Shutdown	175124 Aerojet Rocketdyne of DE, Inc. Canoga Park, Los Angeles County 3764 NOx 7,048 Facility ceased making rocket engines and was permanently shut down. The company's representative was unwilling to provide information regarding the reason for shutdown. The land was sold for development.
Facility ID Facility Name City and County SIC Pollutant(s) 1994 Allocation	800373 Lakeland Development Company Santa Fe Springs, Los Angeles County 4953 NOx/SOx 1,083,844 NOx / 739,296 SOx

Reason for Shutdown

Facility filed for bankruptcy and was sold in 2013. The remaining land was sold to another party in June 2014. Staff was unable to obtain further clarification regarding the facility shutdown.

APPENDIX D FACILITIES THAT EXCEEDED THEIR ANNUAL ALLOCATION FOR COMPLIANCE YEAR 2014

The following is a list of facilities that did not have enough RTCs to cover their NOx and/or SOx emissions in Compliance Year 2014 based on the results of audits conducted by SCAQMD staff.

Facility ID	Facility Name	Compliance Year	Emittant
1744	KIRKHILL - TA COMPANY	2014	NOx
3585	R. R. DONNELLEY & SONS CO, LA MFG DIV	2014	NOx
7411	DAVIS WIRE CORP	2014	NOx
8582	SO CAL GAS CO/PLAYA DEL REY STORAGE FACILITY	2014	NOx
11119	THE GAS CO./ SEMPRA ENERGY	2014	NOx
53729	TREND OFFSET PRINTING SERVICES, INC	2014	NOx
115563	NCI GROUP INC., DBA, METAL COATERS OF CA	2014	NOx
119907	BERRY PETROLEUM COMPANY	2014	NOx
122666	A'S MATCH DYEING & FINISHING	2014	NOx
153033	GEORGIA-PACIFIC CORRUGATED LLC	2014	NOx
171109	PHILLIPS 66 COMPANY/LOS ANGELES REFINERY	2014	SOx
174371	DP3 HANGARS, LLC	2014	NOx

APPENDIX E REPORTED JOB IMPACTS ATTRIBUTED TO RECLAIM

Each year, RECLAIM facility operators are asked to provide employment data in their APEP reports. The report asks company representatives to quantify job increases and/or decreases, and to report the positive and/or negative impacts of the RECLAIM program on employment at their facilities. This appendix is included in each Annual RECLAIM Audit Report to provide detailed information for facilities reporting that RECLAIM contributed to job gains or losses.

During Compliance Year 2014, no facility reported actual job gains or losses attributable to RECLAIM.

Back to Agenda

BOARD MEETING DATE: March 4, 2016

AGENDA NO. 40

- PROPOSAL: Approve and Adopt Technology Advancement Office 2015 Clean Fuels Program Annual Report, 2016 Plan Update, and Resolution
- SYNOPSIS: Each year by March 31, the Technology Advancement Office must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year. Staff has reviewed the Clean Fuels Program with the Clean Fuels Advisory Group, the Technology Advancement Advisory Group and other technical experts. Additionally, the 2016 Clean Fuels Program Draft Plan Update was presented to the Technology Committee for review and comment at its October 16, 2015 meeting and included as an attachment to the Technology Committee report for the full Board. This action is to approve and adopt the final Technology Advancement Clean Fuels Program Annual Report for 2015 and 2016 Plan Update as well as the resolution finding that proposed projects do not duplicate any past or present programs.

COMMITTEE: Technology, February 22, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

- 1. Adopt the attached Technology Advancement Office Clean Fuels Program Plan Update for 2016 and include it in the SCAQMD's Clean Fuels Program;
- 2. Approve the attached Technology Advancement Office Annual Report for 2015; and
- 3. Approve the attached Resolution finding that the update of the Technology Advancement Office Clean Fuels Program Plan and its proposed projects do not duplicate any past or present programs of specified organizations.

Barry R. Wallerstein, D.Env. Executive Officer

MMM:FM:NB:LCM:DAH

Background

Achieving federal and state ambient air quality standards in the South Coast Air Basin will require emission reductions from both mobile and stationary sources beyond those available from current technologies. The preliminary 2016 Air Quality Management Plan (AQMP) measures rely on a mix of currently available technologies as well as the expedited development and commercialization of lower-emitting mobile and stationary advanced technologies in the Basin to achieve these standards. The preliminary 2016 AQMP projects that a 50 percent reduction in NOx is required by 2023 and a 65 percent reduction by 2031, the majority of which must come from mobile sources both on- and off-road, requiring widespread deployment of current clean air technologies as well as further commercialization of advanced technologies. The SCAQMD Clean Fuels Program more than ever before is an integral part of this effort and it must foster and accelerate advancement of transformative transportation and off-road technologies, with an emphasis on commercialization of zero and near-zero emission vehicle and fuel technologies.

The SCAQMD Clean Fuels Program, first initiated in 1988 along with establishment of the Technology Advancement Office (TAO), is implemented as a public-private partnership in conjunction with private industry, technology developers, academic institutions, research institutions and government agencies. This public-private partnership has enabled the SCAQMD to historically leverage public funds with outside investment in a ratio of about \$4 of outside funding to every dollar of SCAQMD funding. While the SCAQMD aggressively seeks leverage funds to accomplish more with every dollar, it also strives to act as a leader in technology development and commercialization in an effort to accelerate the reduction of criteria pollutants.

Health and Safety Code (H&SC) Section 40448.5.1 requires that the SCAQMD adopt a plan that describes the expected cost and benefits of proposed projects prior to any Clean Fuels Program expenditure and find that the proposed projects do not duplicate programs of other organizations specified in the H&SC provision. In 1999 SB 98 amended this provision by requiring annual updates to this Plan and 30-day public notice to specified interested parties and the public prior to the annual public hearing at which the Governing Board takes action on the Clean Fuels Program. SB 98 also requires the preparation of an annual report with specified contents. This annual report requires review by an advisory group and approval by the Governing Board, prior to submittal to specified offices of the California Legislature each year. This legislation also specifies the make-up of the 13-member Clean Fuels Advisory Group (CFAG) and its primary responsibilities to make recommendations regarding the most cost-effective projects that advance and implement clean fuels technology and improve public health. The membership of the CFAG was initially approved by the Governing Board in September 1999. Changes to the composition are reviewed by the Board's Technology Committee on an as-needed basis. Prior to formation of the CFAG, the SCAQMD had formed the Technology Advancement Advisory Group (TAAG) to review and assess

the Clean Fuels Program. The charter and membership of the TAAG was revisited in 1999 with formation of the CFAG so their function would complement each other. The TAAG's charter specifies membership changes must be approved by the Governing Board's Technology Committee, and in fact membership changes to the TAAG were approved by the Technology Committee last year in conjunction with approval of the prior reports.

Proposal

This package includes an adoption resolution (Attachment A) and one combined document comprising the TAO Clean Fuels Program 2015 Annual Report and 2016 Plan Update (Attachment B). This action is for the Governing Board to approve and adopt the TAO Clean Fuels Program Annual Report and Plan Update. Additionally, as part of the Governing Board's consideration of the Plan Update, the Governing Board must make a finding that the update to the TAO Clean Fuels Program and its proposed projects do not duplicate any past or present programs of specified organizations. The review process by the two advisory groups helps ensure that SCAQMD efforts do not duplicate projects. The advisory groups provide feedback to staff on the documents during in-person biannual meetings and through subsequent correspondence. The advisors are all experts in different fields and are members of national laboratories, state or federal agencies and/or academia. Staff diligently monitors specific technologies through efforts at state and federal collaboratives, partnerships and industrial coalitions. Finally, staff also invites other technical experts to review the Annual Report and Plan Update. Through this wide network, staff is confident there is no duplication of technology projects represented in the Plan Update as required in the H&SC. Attachment A is an adoption resolution making such a finding.

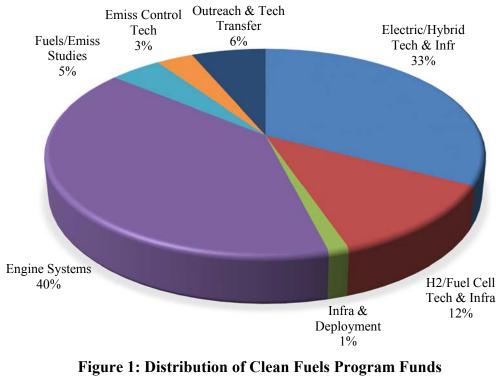
Clean Fuels Program Annual Report 2015

The Annual Report covers projects and progress of the Program for Calendar Year (CY) 2015. As discussed earlier, this report addresses all of the requirements specified in H&SC 40448.5.1(d). Specifically, the report includes the following required elements:

- A description of the core technologies that the SCAQMD considers critical to ensure attainment and maintenance of ambient air quality standards and a description of the efforts made to overcome commercialization barriers;
- An analysis of the impact of the SCAQMD's Clean Fuels Program on the private sector and on research, development and commercialization efforts by major automobile and energy firms, as determined by the SCAQMD;
- A description of projects funded by the SCAQMD, including a list of recipients, subcontractors, cofunders, matching state or federal funds and expected and actual results of each project advancing and implementing clean fuels technology and improving public health;

- The title and purpose of all projects undertaken pursuant to the Clean Fuels Program, the names of the contractors and subcontractors involved in each project, and the amount of money expended for each project;
- A summary of the progress made toward the goals of the Clean Fuels Program; and
- Funding priorities identified for the next year and relevant audit information for previous, current and future years covered by the report.

During CY 2015, the Clean Fuels Program executed 69 new projects or studies and modified 9 continuing contracts adding additional dollars to sponsor research, development, demonstration and deployment projects of alternative fuel and clean fuel technologies. The SCAQMD's contribution to these projects was approximately \$10.7 million, with total project costs of nearly \$47.3 million that includes funding from other governmental agencies, private sector, academia and research institutions. These projects address a wide range of air quality issues with a diverse mix of advanced technologies. Figure 1 shows the distribution of funding committed from the Clean Fuels Program through executed agreements in 2015. It should be noted that the executed agreements typically lag the Governing Board awards due to the time necessary to negotiate contracts. During this phase, project awards may be reduced in scope, encounter delays in execution, or may not be contracted at all due to unforeseen difficulties following Governing Board approval. As such, the funding distribution represents a "snapshot-in-time" of the Clean Fuels Program for the calendar year.



in CY 2015 (\$10.7 Million)

During CY 2015, the SCAQMD supported a variety of projects and technologies, ranging from near-term to long-term research, development, demonstration and deployment activities. This "technology portfolio" strategy provides the SCAQMD the ability and flexibility to leverage state and federal funding while also addressing the specific needs of the South Coast Air Basin. Projects executed in CY 2015 included continued development and demonstration of electric and hybrid technologies and infrastructure with an emphasis on zero emission goods movement technologies, development and demonstration of hydrogen technologies and infrastructure, development and demonstration of heavy-duty natural gas engines and vehicles, and several fuels and emissions studies including development of a roadmap to identify barriers and opportunities to commercialization of key medium- and heavy-duty vehicle vocations.

In addition to the new projects, 38 research, development and demonstration projects or studies and 8 technology assessment and transfer projects were completed in CY 2015. Summaries for each of the technical projects are provided in Appendix C of the Annual Report.

The Clean Fuels Program in CY 2015 has continued to leverage other outside opportunities, with the SCAQMD securing awards totaling \$8.56 million from federal and state funding for projects that will be included in the Clean Fuels Program or which align well with and are complementary to the Clean Fuels Program. Staff will continue to look for and pursue applicable funding opportunities that may focus on greenhouse gas emissions reductions, energy efficiency and reduction in petroleum usage, while remaining committed to acting as a leader in developing advanced technologies that lower criteria pollutants.

Clean Fuels Program Plan Update 2016

Every year, TAO staff re-evaluates the Clean Fuels Program to develop a Plan Update which essentially serves to re-calibrate the technical direction of the Program. The attached Plan Update for the Clean Fuels Program identifies potential projects to be considered for funding during 2016 and beyond. The proposed projects reflect promising low-, near-zero or zero emission technologies and applications that are emerging in the different source categories. This Plan Update includes a number of proposed projects, not all of which are expected to be funded in the current calendar year given the available budget. Some of the proposed projects for 2016 include but are not limited to: 1) development and demonstration of zero emission capable drayage trucks; 2) continuing demonstrations under the Zero Emission Container Transport (ZECT I & II) Program; 3) development and demonstration of zero emission buses; 4) development and demonstrations; 5) development and demonstration of alternative fuel production and infrastructure, especially with renewable fuels; 6) fuels and emissions studies including in-use emissions testing of heavy-duty vehicles in various vocations and characterization of intermediate volatility organic compounds; and 5) lease of fuel cell vehicles (FCVs) for use in Technology Advancement's demonstration fleet to promote marketability and demand of FCVs. Projects not funded in 2016 may be considered for funding in future years.

In addition to identifying proposed projects to be considered for funding, this Plan Update confirms nine key technical areas of highest priority to the SCAQMD. These high priority areas are listed below based on the proposed funding distribution shown in Figure 2:

- Electric and Hybrid Vehicle Technologies and Related Infrastructure (emphasizing electric and hybrid electric trucks and container transport technologies with zero-emission operation)
- Hydrogen and Mobile Fuel Cell Technologies and Infrastructure
- Engine Systems (emphasizing heavy-duty alternative and renewable fuel engines for truck and rail applications)
- Fueling Infrastructure and Deployment (predominantly natural gas and renewable fuels)
- Fuels and Emission Studies
- Outreach and Technology Transfer
- Stationary Clean Fuels Technologies (including renewables)
- Emission Control Technologies
- Health Impacts Studies

It should be noted that these priorities represent the areas where SCAQMD funding is thought to have the greatest impact. In keeping with the diverse and flexible "technology portfolio" approach, however, these priorities may shift during the year to: (1) capture opportunities such as cost-sharing by the state government, the federal government or other entities, (2) address specific technology issues which affect residents within the SCAQMD jurisdiction; (3) incorporate findings from recent studies; or (4) further accelerate technology development, commercialization or market acceptance of promising technologies.

These technical priorities will necessarily be balanced by funding availability and the availability of qualified projects. Revenues from several sources support the SCAQMD's Technology Advancement program. The principal revenue source is the Clean Fuels Program which, under H&SC Section 40448.5 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile and stationary sources to support the Program's objectives, albeit with constraints on the use of the funds. Grants and cost-sharing revenue contracts from various government agencies, such as CARB, CEC, NREL and the U.S. Departments of Energy and Transportation, also support technology advancement efforts.

The Plan Update is the result of a comprehensive planning and review process. This process included consideration of the 2012 AQMP control measures as well as the preliminary 2016 AQMP measures. It also incorporates coordination activities involving outside organizations including consideration of federal, state and local activities and proposed integrated solutions that capture the co-benefits of reduced GHG emissions and criteria pollutants. As part of this process, staff hosted two meetings in September 2015 and January 2016 to solicit input from the CFAG, TAAG and other technical experts. During these meetings, the participants reviewed the current Technology Advancement projects and discussed near-term and long-term technologies as potential projects. Additionally, staff attended meetings or workshops with CARB, CEC, the California Fuel Cell Partnership, the California Plug-in Electric Vehicle Collaborative, California Hydrogen Business Council, and other entities to solicit and incorporate technical areas for potential leveraged funding and project coordination.

Based on communications with the organizations specified in H&SC Section 40448.5.1 and review of their programs, the projects proposed in this Plan Update do not appear to duplicate any past or present projects. As each individual project is recommended to the Governing Board for funding, staff will continue to coordinate with these organizations to ensure that duplication is avoided and ensure optimal expenditure of Clean Fuels Program funds.

Finally, staff presented the Draft 2016 Clean Fuels Program Plan Update to the Technology Committee on October 16, 2015, and submitted it to the full SCAQMD Governing Board as an attachment to the Technology Committee report at its November 6, 2015 meeting. Figure 2 graphically depicts the potential distribution of SCAQMD Clean Fuels funds, based on projected program costs of \$16.4 million, for the nine project areas discussed above.

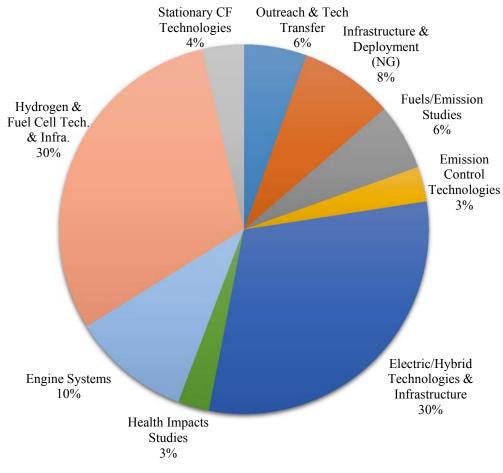


Figure 2: Projected Cost Distribution for Potential Projects in 2016 (\$16.4 million)

The expected actual program expenditures for 2016 will be much less than the total projected program cost since not all projects will materialize. The target allocations are based on balancing technology priorities, technical challenges and opportunities discussed previously and near-term versus long-term benefits with the constraints on available SCAQMD funding. Specific contract awards throughout 2016 will be based on this proposed allocation, the quality of proposals received and evaluation of projects against standardized criteria and, ultimately, the Governing Board's approval. At that time, additional details will be provided about the technology, its application, the specific scope of work, the project team capabilities and the project cost-sharing.

H&SC Section 40448.5.1 requires the Board approve the Clean Fuels Annual Report for 2015 and adopt the Clean Fuels Plan Update for 2016 as well as find that the proposed projects do not duplicate programs of other organizations specified in the H&SC provision. And as required, the Annual Report and Plan Update have been reviewed by the SB 98 Clean Fuels Advisory Group.

Attachments

A. Resolution

B. TAO Clean Fuels Program 2015 Annual Report and 2016 Plan Update

ATTACHMENT A

RESOLUTION NO. 16-

A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) approving the Technology Advancement Office Clean Fuels Program Annual Report for 2015 and adopting the Clean Fuels Program Plan Update for 2016.

WHEREAS, the Board initiated a Clean Fuels Program in 1988 to expedite the demonstration and commercialization of advanced low emission and zero emission technologies and clean fuels; and,

WHEREAS, Health and Safety Code Sections 40404 and 40448.5 require the SCAQMD to coordinate and manage a Clean Fuels Program to accelerate the utilization of clean-burning fuels within the South Coast Air Basin; and,

WHEREAS, Health and Safety Code Section 40512 and Vehicle Code Section 9250.11 authorize funding for the SCAQMD Clean Fuels Program; and,

WHEREAS, SB 98 (Alarcon), chaptered into state law on June 8, 1999, extended the funding authority for the Clean Fuels Program and added administrative provisions under Health and Safety Code Section 40448.5.1 regarding program planning and reporting, including:

- Providing notice to interested parties and the public at least 30 days prior to the annual public hearing at which the south coast district board or a committee of the board takes action to approve the clean-burning fuels program.
- Consulting with the SB 98 Clean Fuels Advisory Group regarding approval of the required annual report. The results of that consultation shall be provided to the south coast district board prior to its approval of the report.
- Submitting the Clean Fuels Program annual report to the office of the Legislative Analyst and to the committees of the Legislature responsible for improving air quality on or before March 31 of each year that the clean-burning fuels program is in operation.

WHEREAS, SB 1646 (Padilla), chaptered into state law on September 30, 2008, reauthorized the funding authority for the Clean Fuels Program, removed the sunset of January 1, 2010, and reinstated the five percent administrative cap; and,

WHEREAS, the Technology Advancement Office Clean Fuels Program Plan Update has been reviewed and commented on by both the Technology Advancement Advisory Group and the SB 98 Clean Fuels Advisory Group; and, WHEREAS, Health and Safety Code Section 40448.5.1 requires that the SCAQMD coordinate and ensure non-duplication of clean fuels-related projects with specified organizations, including the: CARB, CEC, California air quality management districts or air pollution control districts, a public transit district or authority within the geographic jurisdiction of the south coast district, San Diego Transit Corporation, North County Transit District, Sacramento Regional Transit District, Alameda-Contra Costa Transit District, San Francisco Bay Area Rapid Transit District, Santa Barbara Metropolitan Transit District, Los Angeles Department of Water and Power, Sacramento Municipal Utility District, Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas and Electric Company, or the Office of Mobile Sources within the U.S. Environmental Protection Agency; and

WHEREAS, based on communications with the organizations specified in Health and Safety Code Section 40448.5.1 and review of their programs, the proposed program and projects included in the Technology Advancement Office Clean Fuels Program Plan Update do not duplicate any other past or present program or project funded by those organizations; and,

WHEREAS, notice has been provided to interested parties and the public at least 30 days prior to the annual public hearing at which the south coast district board is to approve the clean-burning fuels program; and,

WHEREAS, the SB 98 Clean Fuels Advisory Group has reviewed the Technology Advancement Office Annual Report.

NOW, THEREFORE, BE IT RESOLVED, that the Board finds the Technology Advancement Office Clean Fuels Program Plan Update does not duplicate any past or present programs or projects funded by the above-specified organizations.

BE IT FURTHER RESOLVED, that the Board approves the Technology Advancement Office Clean Fuels Program Annual Report for 2015.

BE IT FURTHER RESOLVED, that the Board adopts the Technology Advancement Office Clean Fuels Program Plan Update for 2016.

BE IT FURTHER RESOLVED, that the Board hereby directs staff to forward the Technology Advancement Office Clean Fuels Program Annual Report 2015 and Plan Update 2016 to the California Legislature and the Legislative Analyst.

Dated:

ATTACHMENT B

TECHNOLOGY ADVANCEMENT OFFICE CLEAN FUELS PROGRAM 2015 CLEAN FUELS ANNUAL REPORT AND 2016 PLAN UPDATE

South Coast Air Quality Management District March 2016 [This Page Intentionally Left Blank]

South Coast Air Quality Management District

Governing Board

Chairman

William A. Burke, Ed.D. Assembly Speaker Appointee

County Representatives

Michael D. Antonovich Supervisor, Los Angeles County

John J. Benoit** Supervisor, Riverside County

Shawn Nelson Supervisor, Orange County

Janice Rutherford* Supervisor, San Bernardino County

State Representatives

Joseph K. Lyou, Ph.D. Governor's Appointee

Dr. Clark E. Parker, Sr. Senate Rules Committee Appointee

Vice Chairman

Ben Benoit Councilmember, City of Wildomar Riverside County Cities

Cities Representatives

Joe Buscaino* Councilmember, City of Los Angeles City of Los Angeles

Michael Cacciotti Councilmember, City of South Pasadena Los Angeles County, Eastern Region

Larry McCallon* Mayor, City of Highland San Bernardino County Cities

Judith Mitchell* Councilmember, City of Rolling Hills Estates Los Angeles County, Western Region

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EXECUTIVE SUMMARY

Introduction

The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties. This region, which encompasses all of the South Coast Air Basin plus small portions of the Mojave Desert and Salton Sea Air Basins, historically experiences the worst air quality in the nation due to the natural geographic and atmospheric conditions of the region coupled with the high population density and associated mobile and stationary source emissions. Recognizing this challenge, in 1988 the state established the SCAQMD's Clean Fuels Program (Program), along with the SCAQMD's Technology Advancement Office (TAO). The Clean Fuels Program affords the SCAQMD the ability to fund the development, demonstration and accelerated deployment of clean fuels and transportation technologies.

For over 20 years, using funding received through a \$1 motor vehicle registration fee, the Clean Fuels Program has encouraged, fostered and supported clean fuels and transportation technologies such as hydrogen and fuel cells, natural gas engines and infrastructure, battery electric vehicles, plug-in hybrid electric vehicles and related fueling infrastructure. A key strategy of the Program, which allows significant leveraging of the Clean Fuels funding (typically \$3-\$4 to every \$1), is its implementation as a public-private partnership in conjunction with private industry, technology developers, academic institutions, research institutions and government agencies. Further, while the SCAQMD aggressively seeks leverage funds to accomplish more with every dollar, it also strives to act as a leader in technology development and commercialization in an effort to accelerate the reduction of criteria pollutants. As a result, the SCAQMD Clean Fuels Program has traditionally supported a portfolio of technologies, in different stages of maturity, to provide a continuum of emission reductions and health benefits over time. This approach provides the greatest flexibility and optimizes the region's ability to achieve National Ambient Air Quality Standards (NAAQS).

Health & Safety Code (H&SC) 40448.5.1 requires the SCAQMD to prepare, and submit to the Legislative Analyst each year, a Clean Fuels Annual Report and Plan Update. The Clean Fuels Annual Report looks at what the Program accomplished in the prior calendar year (CY) and the Clean Fuels Plan Update looks ahead at proposed expenditures for the next CY, essentially re-calibrating the technical direction of the Program. Preliminary review and comment by SCAQMD's Governing Board, advisory groups, technical experts and other interested parties are incorporated into the Final 2016 Plan Update, along with the 2015 Clean Fuels Annual Report, which are due to the Legislative Analyst by March 31, 2016.

The overall strategy of the SCAQMD's Clean Fuels Program is based in large part on technology needs identified through the Air Quality Management Plan (AQMP) process and the SCAQMD Board's directives to protect the health of residents in Southern California, which encompasses approximately 16.8 million people (nearly half the population of California). The AQMP is the long-term "blueprint" that defines:

- basin-wide emission reductions needed to achieve federal ambient air quality standards;
- regulatory measures to achieve those reductions;
- timeframes to implement these proposed measures; and
- technologies required to meet these future proposed regulations.

The preliminary 2016 AQMP control measures rely on a mix of currently available technologies as well as the expedited development and commercialization of lower-emitting mobile and stationary advanced technologies in the Basin to achieve air quality standards. The preliminary 2016 AQMP

projects that an approximate 50 percent reduction in NOx is required by 2023 and a 65 percent reduction by 2031, the majority of which must come from mobile sources both on- and off-road. These emission reduction needs were further identified in the California Air Resources Board's (CARB's) recent draft discussion document "Mobile Source Strategy" (October 2015)¹. Moreover, the SCAQMD is currently only one of two regions in the nation recognized as an extreme ozone nonattainment area (the other is San Joaquin Valley). Ozone (a key component of smog) is created by a chemical reaction between NOx and volatile organic compound (VOC) emissions at ground level. This is especially noteworthy because the largest contributor to ozone is NOx emissions, and mobile sources contribute approximately 80 percent of the NOx emissions in this region. Furthermore, NOx emissions, along with VOC emissions, also lead to the formation of PM2.5 (particulate matter measuring 2.5 microns in size as contained in a cubic meter of air, expressed as micrograms per cubic meter ($\mu g/m^3$).

The preliminary 2016 AQMP includes integrated strategies and measures to demonstrate attainment of the following NAAQS:

- 8-hour Ozone (75 parts per billion or ppb) by 2031
- Annual PM2.5 (12 µg/m³) by 2021-2025
- 8-hour Ozone (80 ppb) by 2023 (updated from the 2012 AQMP)
- 1-hour Ozone (120 ppb) by 2022 (updated from the 2012 AQMP)
- 24-hour PM2.5 ($35 \mu g/m^3$) by 2019 (updated from the 2012 AQMP)

The 2016 AQMP will also take an initial look at the emission reductions needed to meet the new federal 8-hour ozone air quality standard of 70 ppb anticipated to be attained by 2037.

The daunting challenge to reduce NOx and PM2.5 requires the Clean Fuels Program to encourage and accelerate advancement of transformative fuel and transportation technologies, leading the way for commercialization of progressively lower-emitting fuels and vehicles. Given the relationship between NOx, ozone and PM2.5, the 2016 Plan Update must emphasize emission reductions in all these areas. However, the confluence of federal, state and local planning efforts on climate change, greenhouse gases (GHGs), petroleum reduction, air quality and other environmental areas should provide cobenefits that may help the region.

Since the last AQMP, it has become clear that the effect of moving containers through the Ports of Los Angeles and Long Beach and the subsequent movement of goods throughout the region not only have a dramatic impact on air quality but also the quality of life in the communities along the major goods movement corridors. In recognition of these impacts, the SCAQMD added as a key element to its strategy a concerted effort to develop and demonstrate zero and near-zero emissions goods movement technologies, such as electric trucks, plug-in hybrid trucks with all-electric range, zero emission container transport technologies, trucks operating from wayside power including catenary technology and other heavy-duty technologies. The SCAQMD goods movement projects that have been initiated or anticipated incorporate a variety of fuels, including electricity, natural gas, biofuels, hydrogen and diesel. The prioritization of these types of projects is emphasized in this 2016 Plan Update.

The proposed funding allocations and prioritization are commensurate with the emissions inventory for the various categories, as illuminated by Table 1 (page 3) which reflects NOx summary planning inventory in tons per day (tpd) from base year 2012 to NOx inventory for 2023, as projected in the preliminary 2016 AQMP.

¹ <u>http://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc_dd.pdf</u>

2015 Annual Report

During CY 2015 the SCAQMD executed 69 new contracts, projects or studies and modified 9 continuing projects adding additional dollars toward research, development, demonstration and deployment (RDD&D) of alternative fuel and clean fuel technologies. Table 3 (page 30) lists these 78 projects or studies, which are further described in this report. The SCAQMD Clean Fuels Program contributed nearly \$10.7 million in partnership with other governmental organizations, private industry, academia and research institutes, and interested parties, with total project costs of nearly \$47.3 million. Table 4 (page 33) provides information on outside funding received into the Clean Fuels Fund (\$2.75 million in 2015) as cost-share passed through the SCAQMD for the contracts executed in CY 2015. Table 5 (page 33) provides a comprehensive summary of federal, state and other revenue awarded to the SCAQMD during CY 2015 (approximately \$8.56 million) for projects to be included within the Clean Fuels Program or which align well with and are complementary to the Clean Fuels Program.

The projects or studies executed in 2015 addressed a wide range of issues and opportunities with a diverse mix of advanced technologies. The following core areas of technology advancement for 2015 executed contracts (in order of funding percentage) include:

- Engine Systems (emphasizing alternative and renewable fuels for truck and rail applications)
- Electric and Hybrid Vehicle Technologies and Related Infrastructure (emphasizing electric and hybrid electric trucks and container transport technologies with zero emission operations)
- Hydrogen and Mobile Fuel Cell Technologies and Infrastructure
- Outreach and Technology Transfer
- Fuels and Emission Studies
- Emission Control Technologies
- Fueling Infrastructure and Deployment (predominantly natural gas and renewable fuels)

During CY 2015, the SCAQMD supported a variety of projects and technologies, ranging from nearterm to long-term research, development, demonstration and deployment activities. This "technology portfolio" strategy provides the SCAQMD the ability and flexibility to leverage state and federal funding while also addressing the specific needs of the South Coast Air Basin (Basin). Projects executed in CY 2015 included but are not limited to continued development and demonstration of electric and hybrid technologies with an emphasis on zero emission goods movement technologies, development and demonstration of hydrogen technologies and infrastructure, development and demonstration of heavy-duty natural gas engines and vehicles, and fuels and emissions studies.

As of January 1, 2016, there were 112 open contracts (Appendix B) in the Clean Fuels Program.

Forty RDD&D projects or studies and seven technology assessment and transfer contracts were completed in 2015, as listed in Table 6 (page 63). Appendix C comprises two-page summaries of the technical projects completed in 2015. In accordance with California Health and Safety Code Section 40448.5.1(d), this report must be submitted to the state legislature by March 31, 2016, after approval by the SCAQMD Governing Board.

2016 Plan Update

Every year TAO staff re-evaluates the Clean Fuels Program to develop a Plan Update which essentially serves to re-assess the technology progress and direction for the agency. The Program continually seeks to support the development and deployment of lower-emitting technologies. The design and implementation of the Program Plan must balance the needs in the various technology sectors with technology readiness, emissions reduction potential and cofunding opportunity. As the state and federal governments have turned a great deal of their attention to climate change and

petroleum reduction goals, the SCAQMD has remained committed to developing, demonstrating and commercializing zero and near-zero emission technologies. Fortunately many, if not the majority, of technology sectors that address our need for NOx reductions also garner greenhouse gas (GHG) and petroleum reductions. Due to these "co-benefits," the SCAQMD has been successful in partnering with the state and federal government, which allows the Clean Fuels Program to extensively leverage its funding.

The overall strategy is based in large part on technology needs identified in the SCAQMD's AQMP and the SCAQMD Governing Board's directives to protect the health of residents in the Basin. As summarized in Figure 1 (page 3), the NOx, VOC and PM emission sources of greatest concern are heavy-duty on-road vehicles, medium- and light-duty on-road vehicles, and off-road equipment.

To identify project or technology opportunities in which its available funding can make a significant difference in deploying progressively cleaner technologies in the Basin, the SCAQMD employs a number of outreach and networking activities. These activities range from intimate involvement with state and federal collaboratives, partnerships and industrial coalitions, to the issuance of Program Opportunity Notices to solicit project ideas and concepts as well as issuance of Requests for Information to determine the state of various technologies and the challenges faced by those technologies for commercialization.

The Plan Update includes projects to develop, demonstrate and commercialize a variety of technologies, from near-term to long-term, that are intended to provide solutions to the emission control needs identified in the preliminary 2016 AQMP. As noted, the preliminary 2016 AQMP analysis indicates that an approximate 50 percent reduction in NOx is required by 2023 with an additional 15 percent NOx reduction beyond 2023 levels by 2031. Given the need for these significant reductions over the next 7-15 year timeframe, mid- and longer-term alternative fuels, hybrid, electric and fuel cell based technologies are emphasized. Several of the technology areas of focus include:

- reducing emissions from port-related activities, such as cargo handling equipment and container movement technologies, including demonstration and deployment of cargo container movement systems with zero emission range;
- mitigating criteria pollutant increases from renewable fuels, such as renewable diesel and dimethyl ether (DME);
- developing electric, hybrid, battery and plug-in hybrid technologies across light-, mediumand heavy-duty platforms; and
- producing transportation fuels and energy from renewable sources.

Table 7 (page 81) lists the potential projects across the nine core technologies identified in this report. Potential projects for 2016 total \$16.4 million, with anticipated leveraging of more than \$3 for every \$1 of Clean Fuels funding for total project costs of more than \$66 million. The proposed projects may also be funded by revenue sources other than the Clean Fuels Program, especially VOC and incentive projects.

CLEAN FUELS PROGRAM Background & Overview

Program Background

The South Coast Air Basin, which comprises all of Orange County and the urban portions of Los Angeles, San Bernardino and Riverside Counties, has the worst air quality in the nation due to a combination of factors, including high vehicle population, high vehicle miles traveled within the region and geographic and atmospheric conditions favorable for photochemical oxidant (smog) formation. Due to these challenges, the state legislature enabled the SCAQMD to implement the Clean Fuels Program to accelerate the implementation and commercialization of clean fuels and advanced technologies. In 1999, state legislation was passed which amended and extended the Clean Fuels Program. Specifically, as stated in the California Health and Safety Code (H&SC) section 40448.5.1(d), the SCAQMD must submit to the Legislature, on or before March 31 of each year, an annual report that includes:

- 1. A description of the core technologies that the SCAQMD considers critical to ensure attainment and maintenance of ambient air quality standards and a description of the efforts made to overcome barriers to commercialization of those technologies;
- 2. An analysis of the impact of the SCAQMD's Clean Fuels Program on the private sector and on research, development and commercialization efforts by major automotive and energy firms, as determined by the SCAQMD;
- 3. A description of projects funded by the SCAQMD, including a list of recipients, subcontractors, cofunding sources, matching state or federal funds and expected and actual results of each project advancing and implementing clean fuels technology and improving public health;
- 4. The title and purpose of all projects undertaken pursuant to the Clean Fuels Program, the names of the contractors and subcontractors involved in each project and the amount of money expended for each project;
- 5. A summary of the progress made toward the goals of the Clean Fuels Program; and
- 6. Funding priorities identified for the next year and relevant audit information for previous, current and future years covered by the project.

Furthermore, H&SC section 40448.5.1(a)(2) requires the SCAQMD to find that the proposed program and projects funded as part of the Clean Fuels Program will not duplicate any other past or present program or project funded by the state board and other government and utility entities. This finding does not prohibit funding for programs or projects jointly funded with another public or private agency where there is no duplication. The following section describes the panel of external experts that helps review the Clean Fuels Program.

Program Review

In 1990, the SCAQMD initiated an annual review of its technology advancement program by an external panel of experts. That external review process has evolved, in response to SCAQMD policies and legislative mandates, into two external advisory groups. The Technology Advancement Advisory Group (one of six standing Advisory Groups that make up the SCAQMD Advisory Council) is made up of stakeholders representing industry, academia, regulatory agencies, the scientific community and environmental impacts. The Technology Advancement Advisory Group serves to:

- Coordinate the SCAQMD program with related local, state and national activities;
- Review and assess the overall direction of the program; and
- Identify new project areas and cost-sharing opportunities.

In 1999, the second advisory group was formed as required by SB 98 (Alarcon). Under H&SC Section 40448.5.1(c), this advisory group must comprise 13 members with expertise in clean fuels technology and policy or public health and appointed from the scientific, academic, entrepreneurial, environmental and public health communities. This legislation further specified conflict-of-interest guidelines prohibiting members from advocating expenditures towards projects in which they have professional or economic interests. The objectives of the SB 98 Clean Fuels Advisory Group are to make recommendations regarding projects, plans and reports, including approval of the required annual report prior to submittal to the SCAQMD Governing Board. Also in 1999, in light of the formation of the Clean Fuels Advisory Group, the SCAQMD also revisited the charter and membership of the Technology Advancement Advisory Group to ensure their functions would complement each other.

On an as-needed basis, changes to the composition of the Clean Fuels Advisory Group are reviewed by the SCAQMD Board while changes to the Technology Advancement Advisory Group are reviewed by the SCAQMD Board's Technology Committee. Current membership changes to both advisory groups, if required, will be considered by the SCAQMD Board and its Technology Committee, respectively, as part of consideration of the 2015 Annual Report and 2016 Plan Update. The current members of the SB 98 Clean Fuels Advisory Group and Technology Advancement Advisory Group are listed in Appendix A, with any proposed changes, subject to SCAQMD Board approval, duly noted.

The review process of the Clean Fuels Program now includes at least two full-day retreats of the two Advisory Groups, typically in the summer and winter, review by other technical experts, review by the Technology Committee of the SCAQMD Governing Board, a public hearing of the Annual Report and Plan Update before the full SCAQMD Governing Board, along with adoption of a resolution finding that the proposed program and projects funded as part of the Clean Fuels Program will not duplicate any other past or present program or project funded by the state board and other government and utility entities, as required by the H&SC, and finally submittal of the Annual Report and Plan Update to the Legislature by March 31 of every year.

The Need for Advanced Technologies & Clean Fuels

Achieving federal and state clean air standards in Southern California will require emission reductions from both mobile and stationary sources beyond those expected using current technologies. Table 1 reflects NOx inventory in the 2012 base year and NOx inventory as projected by attainment year 2023, due to continued implementation of already adopted control measures. The need for advanced technologies and clean fuels is best illustrated by Figure 1 below, which identifies NOx emissions by category and identifies just how far those emissions must be reduced to meet federal standards by 2023 and 2031. The italicized source categories in Table 1 are the primary focus of the Clean Fuels Program.

2012 (base year)		2023 (without further control measures)	
Source Category	NOx (tpd)	Source Category	NOx (tpd)
HD Diesel Trucks	150	HD Diesel Trucks	45
Cars/Light-Duty Trucks/SUVs	82	Off-Road Equipment	45
Off-Road Equipment	76	Ocean Going Vessels	23
Ocean Going Vessels	30	Locomotives	23
Medium Duty Trucks	27	Cars/Light-Duty Trucks/SUVs	22
Buses	25	Aircraft	16
Locomotives	21	RECLAIM	15
RECLAIM	20	Commercial Harbor Craft	11
Commercial Harbor Craft	17	Manufacturing and Industrial	10
Residential Fuel Combustion	14	Residential Fuel Combustion	9
Aircraft	13	Service and Commercial	9
Service and Commercial	12	Buses	8
Manufacturing and Industrial	12	Medium Duty Trucks	8
Heavy Duty Gas Trucks	11	Recreational Boats	6
Recreational Boats	8	Heavy Duty Gas Trucks	5
All Other Sources	9	All Other Sources	10
	529		265

Table 1: NOx Summer Planning	Inventory - 2012 to 2023
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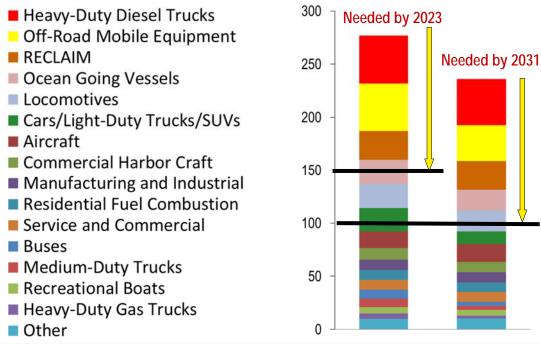


Figure 1: NOx Emission Reductions Needed as Projected in Preliminary 2016 AQMP²

² Data used to generate the table and chart above are from an inventory run on 1/7/16.

Additionally, the following piechart reflects NOx contributors by sector, sharply illustrating the impact of mobile sources on air quality and why the preliminary 2016 AQMP calls for an approximate 50 percent reduction of NOx by 2023 as well as why this region is recognized as an extreme ozone nonattainment area.

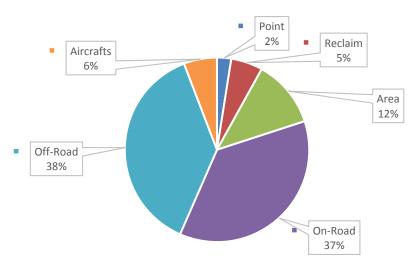


Figure 2: 2023 NOx Contributors by Sector

Finally, the following piechart reflects the relative contribution of directly emitted PM2.5 by source category to the 2023 emission inventory for an average annual day and does not include PM2.5 from secondary organic aerosols (SOAs) that may be generated as a result of emissions from on- and off-road equipment. A supplement to the 24-hour PM2.5 SIP will address further PM reductions to achieve attainment since the 24-hour PM2.5 standard was not attained in 2014 due to extreme drought conditions.

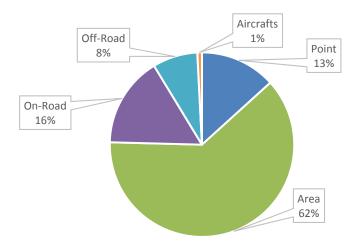


Figure 3: Directly Emitted 2023 PM2.5 Emissions (65 tpd)

To fulfill long-term emission reduction targets, the preliminary 2016 AQMP relies on a mix of currently available technology as well as the expedited development and demonstration of advanced technologies that are not yet ready for commercial use. Significant reductions are anticipated from implementation of advanced control technologies for both on-road and off-road

mobile sources. In addition, the air quality standards for ozone (80 ppb, 8-hour average) and fine particulate matter, promulgated by the U.S. Environmental Protection Agency (U.S. EPA) in 1997 and 2006, are projected to require additional long-term control measures for both NOx and VOC. The preliminary 2016 AQMP's estimate of needed NOx reductions will require the SCAQMD Clean Fuels Program to encourage and accelerate advancement of cleaner, transformative transportation technologies that can be used as control strategies in the AQMP.

Health studies also indicate a greater need to reduce NOx emissions and toxic air contaminant emissions. For example, the goal of SCAQMD's Multiple Air Toxics Exposure Study (MATES) IV, initially launched in 2012, like the prior three MATES efforts, was to assess air toxic levels, update risk characterization, and determine gradients from selected sources. However, MATES IV added ultrafine PM and black carbon monitoring components as well. The study found a dramatic decrease in ambient levels of diesel particulate matter and other air toxics. Diesel PM was still the major driver of air toxics health risks. While the levels and exposures decreased, a revision to the methods used to estimate cancer risk from toxics developed by the California Office of Health Hazard Identification increased the calculated risk estimates from these exposures by a factor of up to three.

In early January 2015, Governor Brown's state-of-the-state address included ambitious goals to help meet California climate targets for 2030 and beyond, including increasing the amount of electricity generated from renewable sources from 33 to 50 percent and reducing the use of petroleum in cars and trucks by up to 50 percent from today's levels. Subsequently, in October 2015, the Governor signed SB 350 (De León) to codify the goals outlined in his January 2015 inaugural address, albeit prior to signature it was amended to remove the 50 percent reduction of petroleum use in cars and trucks. Nonetheless, SB 350 will still dramatically reshape California's energy economy. In July 2015 the Governor also issued an Executive Order to develop a California Sustainable Freight Action Plan to improve freight efficiency and transition to zero emission technologies.

The emission reductions needed for this region are outlined further in CARB's recent draft discussion document "Mobile Source Strategy" (October 2015)³. Specifically, the document calls for California to build upon its successful efforts to meet critical air quality and climate goals, as summarized below:

- Attaining federal health-based air quality standards for ozone in 2023 and 2031 in the South Coast and San Joaquin Valley, and fine particulate matter (PM2.5) standards in the next decade;
- Achieving GHG emission reduction targets of 40 percent below 1990 levels by 2030;
- Reducing our petroleum use by up to 50 percent by 2030;
- Minimizing health risk from exposure to toxic air contaminants; and
- Increasing energy efficiency and deriving 50 percent of our electricity from renewable sources by 2030.

The document focuses on mobile sources, both on- and off-road equipment, that are responsible for approximately 80 percent of smog-forming NOx emissions, 95 percent of diesel particulate matter emissions, and 50 percent of GHG emissions. Given this contribution, significant cuts in pollution from these sources are needed, therefore the proposed mobile source strategy calls for establishing requirements for cleaner technologies (both zero and near-zero) and deploying these

³ <u>http://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc_dd.pdf</u>

technologies into the fleet, requiring cleaner fuels, and ensuring continued clean performance in use. Actions to accelerate the deployment of cleaner technologies through incentives, efficiency increases in moving people and freight, and support for the use of advanced transportation technologies such as intelligent transportation systems and autonomous vehicles, are also needed. Taken together, these actions would provide the reductions necessary from mobile sources to achieve the air quality and climate goals outlined above.

In summary, advanced, energy efficient and renewable technologies are needed not only for attainment, but also to protect the health of those who reside within the SCAQMD's jurisdiction; to reduce long-term dependence on petroleum-based fuels; and to support a more sustainable energy future. Conventional strategies and traditional supply and consumption need to be retooled in order to achieve the federal air quality goals. To help meet this need for advanced, clean technologies, the SCAQMD Governing Board continues to aggressively carry out the Clean Fuels Program and promote alternative fuels through its Technology Advancement Office (TAO).

The Clean Fuels Program is intended to assist in the rapid development and deployment of progressively lower-emitting technologies and fuels through innovative public-private partnership. Since its inception, SCAQMD's TAO has cofunded projects in cooperative partnerships with private industry, technology developers, academic and research institutions and local, state and federal agencies. The following sections describe program funding, provide a 2015 overview and describe core technologies of the Clean Fuels Program.

Program Funding

The Clean Fuels Program is established under California H&SC Sections 40448.5 and 40512 and Vehicle Code Section 9250.11. This legislation establishes mechanisms to collect revenues from mobile and stationary sources to support the program objectives and identifies the constraints on the use of funds. In 2008, these funding mechanisms were reauthorized under SB 1646 (Padilla), which removed the funding sunset of January 1, 2010, and established the five percent administrative cap instead of the previous cap of two-and-half percent.

The Program is funded through a \$1 fee on motor vehicles registered in the SCAQMD. Revenues collected from these motor vehicles must be used to support mobile source projects. Stationary source projects are funded by an emission fee surcharge on stationary sources emitting more than 250 tons of pollutants per year within the SCAQMD. For CY 2015 the funds available through each of these mechanisms were as follows:

•	Mobile sources (DMV revenues)	\$13,001,831
•	Stationary sources (emission fee surcharge)	\$332,791

The SCAQMD Clean Fuels Program also receives grants and cost-sharing revenue contracts from various agencies, on a project-specific basis, that supplement the SCAQMD program. Historically, such cooperative project funding revenues have been received from CARB, the CEC, the U.S. EPA, the U.S. Department of Energy (DOE) and the U.S. Department of Transportation (DOT). These supplemental revenues depend in large part on the originating agency, its budgetary and planning cycle and the specific project or intended use of the revenues. Table 4 (page 33) lists supplemental grants and revenues totaling \$2.75 million for contracts executed in CY 2015. Table 5 (page 33) lists federal and state revenue totaling nearly \$8.6 million awarded to the SCAQMD in 2015 for projects that will be part of the Clean Fuels Program or align well and will complement the Clean Fuels Program.

The final and perhaps most significant funding source can best be described as an indirect source, i.e., funding not directly received by the SCAQMD. This indirect source is the cost-sharing provided by private industry and other public and private organizations. Historically, the Technology Advancement Office has been successful in leveraging its available public funds with \$3 to \$4 of outside funding for each \$1 of SCAQMD funding. For 2015, the Clean Fuels Program leveraged each \$1 to approximately \$4 of outside funding. Through these public-private partnership, the SCAQMD has shared the investment risk of developing new technologies along with the benefits of expedited development and commercial availability, increased end-user acceptance, reduced emissions from the demonstration projects and ultimately increased use of clean technologies in the Basin. While the SCAQMD aggressively seeks leverage funds to accomplish more with every dollar, it also strives to act as a leader in technology development and commercialization in an effort to accelerate the reduction of criteria pollutants. The SCAQMD's Clean Fuels Program has also avoided duplicative efforts by coordinating and jointly funding projects with major funding agencies and organizations. The major funding partners for 2015 are listed in Table 2 (page 16).

2015 Overview

This report summarizes the progress of the SCAQMD Clean Fuels Program for CY 2015. The SCAQMD Clean Fuels Program cosponsors projects to develop and demonstrate zero, near-zero and low-emission clean fuels and advanced technologies and to promote commercialization and deployment of promising or proven technologies in Southern California. These projects are conducted through public-private partnerships with industry, technology developers, academic and research institutes and local, state and federal agencies.

This report also highlights achievements and summarizes project costs of the SCAQMD Clean Fuels Program in CY 2015. During the period between January 1 and December 31, 2015, the SCAQMD executed 69 new contracts, projects or studies and modified 9 continuing projects adding additional dollars during CY 2015 that support clean fuels and advanced zero, near-zero and low-emission technologies. The SCAQMD Clean Fuels Program contribution for these projects was approximately \$10.7 million, inclusive of \$2.75 million received into the Clean Fuels Fund as cost-share for contracts executed in this reporting period, with total project costs of nearly \$47.3 million. These projects address a wide range of issues with a diverse technology mix. The report not only provides information on outside funding received into the Clean Fuels Fund as cost-share for contracts executed in this period (summarized in Table 4, page 33), but also funds awarded to the SCAQMD for projects to be included in the Clean Fuels Program or which align well and are complementary to the Clean Fuels Program (\$8.56 million in 2015, see Table 5). More details on this financial summary can be found later in this report. The SCAQMD will continue to pursue federal and state funding opportunities in 2016 to amplify leverage, while acknowledging that support of a promising technology is not contingent on outside cost-sharing and affirming that SCAQMD will remain committed to acting as a leader in developing advanced technologies that lower criteria pollutants.

Core Technologies

Given the diversity of sources that contribute to the air quality problems in the Basin, there is no single technology or "Silver Bullet" that can solve all of the problems. A number of technologies are required and these technologies represent a wide range of applications, with full emissions benefit "payoffs," i.e., full commercialization and mass deployment occurring at different times. The broad technology areas of focus – the "Core Technologies" – for the Clean Fuels Program are as follows:

- Electric and Hybrid Vehicle Technologies and Infrastructure (emphasizing electric and hybrid electric trucks and container transport technologies with zero emission operation)
- Hydrogen and Fuel Cell Technologies and Infrastructure
- Engine Systems (emphasizing heavy-duty alternative and renewable fuel engines for truck and rail applications)
- Fueling Infrastructure and Deployment (predominantly natural gas and renewable fuels)
- Health Impacts, Emissions and Fuel Studies
- Stationary Clean Fuels Technologies
- Emission Control Technologies
- Outreach and Technology Transfer

The SCAQMD continually seeks to support the deployment of lower-emitting technologies. The Clean Fuels Program is shaped by two basic factors:

- 1. Low, near-zero and zero emission technologies needed to achieve clean air standards in the Basin; and
- 2. Available funding to support technology development within the constraints imposed by that funding.

The SCAQMD strives to maintain a flexible program to address dynamically evolving technologies and the latest progress in the state of the technology while balancing the needs in the various technology sectors with technology readiness, emissions reduction potential and cofunding opportunities. Although the SCAQMD program is significant, national and international activities affect the direction of technology trends. As a result, the SCAQMD program must be flexible in order to leverage and accommodate these changes in state, national and international priorities. Nonetheless, while the state and federal governments have turned a great deal of their attention to climate change, the SCAQMD has remained committed to developing, demonstrating and commercializing zero and near-zero emission technologies. Fortunately many, if not the majority, of technology sectors that address our need for NOx reductions also garner greenhouse gas (GHG) reductions. Due to these "co-benefits," the SCAQMD has been successful in partnering with the state and federal government. The ultimate challenge for the SCAQMD is to identify project or technology opportunities in which its available funding can make a difference in achieving progressively cleaner air in the Basin. To do this, the SCAQMD employs a number of outreach and networking activities. These range from intimate involvement with state and federal collaboratives, partnerships and industrial coalitions, to the issuance of Program Opportunity Notices to solicit project ideas and concepts as well as the issuance of Requests for Information to determine the state of various technologies and the challenges faced by those technologies for commercialization. While employing a number of creative outreach and networking activities to try to overcome these challenges, SCAQMD's Technology Advancement Office annually develops a comprehensive plan to encourage and accelerate the development and demonstration of cleaner technologies. Every year TAO staff reevaluates the Clean Fuels Program to develop a comprehensive plan (referred to as the 2016 Plan Update within this document) to essentially re-assess the technology progress and direction for the agency.

Historically, mobile source projects have targeted low-emission developments in automobiles, transit buses, medium- and heavy-duty trucks and non-road applications. These vehicle-related efforts have focused on advancements in engine design, electric power-trains and energy storage/conversion devices (e.g., fuel cells and batteries); and implementation of clean fuels (e.g., natural gas, propane and hydrogen) including their infrastructure development. Stationary source

projects have included a wide array of advanced low NOx technologies and clean energy alternatives such as fuel cells, solar power and other renewable energy systems. The focus on recent years has been on zero and near-zero emission technologies to reduce emissions from mobile sources, which contribute to more than 80 percent of the current NOx emissions in this region. However, while mobile sources include both on- and off-road vehicles as well as aircraft and ships, only the federal government has the authority to regulate emissions from aircraft and ships.

Specific projects are selected for cofunding from competitive solicitations, cooperative agency agreements and unsolicited proposals. Criteria considered in project selection include emissions reduction potential, technological innovation, potential to reduce costs and improve cost effectiveness, contractor experience and capabilities, overall environmental impacts or benefits, commercialization and business development potential, cost sharing and consistency with program goals and funding constraints. The core technologies for the SCAQMD programs that meet both the funding constraints as well as preliminary 2016 AQMP needs for achieving clean air are briefly described below.

Electric and Hybrid Vehicle Technologies and Infrastructure

There has been an increased level of activity and attention on electric and hybrid vehicles due to a confluence of factors, including the highly successful commercial introductions of hybrid passenger vehicles and more recently plug-in electric vehicles (PEVs) by almost all of the automakers and increased public attention on global warming, as well as several Executive Orders issued by Governor Brown over the last couple of years. At the federal level, there is also the continued push for PEVs through the EV Everywhere Program.

As a result, there is now a window of opportunity to leverage state and federal activities in the development and deployment of technologies that can accelerate advanced electric and hybrid technologies, including medium- and heavy-duty hybrid vehicle deployment, energy storage technologies, development of medium- and heavy-duty hybrid emission certification cycles, battery durability testing and establishment of driver use patterns. Such technology developments, if successful, are considered *enabling* because they can be applied to a variety of fuels (e.g., gasoline, natural gas, biofuels and hydrogen) and propulsion systems (e.g., ICEs, batteries and fuel cells). In particular, utilizing electric drive technologies to enable zero emission mile capable heavy-duty trucks for goods movement remains a top priority. Electric and hybrid technologies are also being explored to address one of the SCAQMD's 2015-16 Goals and Priority Objectives, which is to continue development and demonstration of zero-emission goods movement technologies.

While EV adoption has surpassed 184,000 vehicles in California, according to the PEV Collaborative, there is still a need for charging infrastructure in order to achieve the fleet penetration required for clean air. The CPUC recently approved Southern California Edison's (SCE's) \$22 million "Charge Ready" pilot program to support installation of as many as 1,500 EV charging stations in their service territory. The SCAQMD will work with SCE to identify the best strategy for EV infrastructure (e.g., destination and residential charging) to complement this new program.

Hydrogen and Mobile Fuel Cell Technologies and Infrastructure

Toyota and Hyundai have commercialized light-duty fuel cell vehicles in 2015, Honda announced plans to introduce a fuel cell vehicle in 2016, and numerous others have plans to commercialize

their own in the near future. The greatest challenge remains the installation and operations of hydrogen fueling stations. AB 8 requires the CEC to allocate \$20 million annually from the Alternative and Renewable Fuel and Vehicle Technology Program until there are at least 100 publicly accessible hydrogen stations in operation in California. Of the 51 stations funded by CEC by the end of 2015, six non-retail and six retail were operational, but all 51 are expected to be operational by the end of 2016 with capacity for more than 10,000 fuel cell vehicles. AB 8 also requires CARB to annually assess current and future FCVs and hydrogen stations in the marketplace. Their July 2015 findings report that there were 179 fuel cell vehicles registered in California, a 43% growth from 2013 estimates, with CEC indicating there this number should grow to 300 by the end of 2015. However, CARB surveys of automakers project 10,500 fuel cell vehicles in California by the end of 2018 and 34,300 by the end of 2021. Clearly, the SCAQMD must continue to support the infrastructure required to refuel the demonstration fuel cell vehicles, but is also actively engaged in finding alternatives to the costly and potential longer term fuel cell power plant technology. As mentioned previously, plug-in hybrid technology could help enable fuel cells by reducing the capacity, complexity and cost of the fuel cell vehicle system.

Engine Systems

Medium- and heavy-duty on-road vehicles contributed approximately 33 percent of the Basin's NOx based on preliminary 2016 AQMP data. More importantly, on-road heavy-duty diesel trucks account for 33 percent of the on-road mobile source PM2.5, which has known toxic effects. These figures notably do not include the significant contribution from off-road mobile sources, which emit 155 tons per day of NOx and 7.9 tons per day of PM2.5 emissions in the Basin. Furthermore, while MATES IV found a dramatic decrease in ambient levels of diesel PM and other air toxics, diesel PM is still the major driver of air toxics health risks. Clearly, significant emission reductions will be required from mobile sources, especially from the heavy-duty sector, to attain the federal clean air standards.

The use of alternative fuels in heavy-duty vehicles can provide significant reductions in NOx and particulate emissions. The current NOx emissions standard for heavy-duty engines is 0.2 g/bhp-hr. The SCAQMD, along with various local, state and federal agencies, continues to support the development and demonstration of alternative fueled low-emission heavy-duty engine technologies, using natural gas, renewable diesel and potentially other renewable liquid fuels such as dimethyl ether (DME), for applications in heavy-duty transport trucks, transit and school buses, rail operations, and refuse collection and delivery vehicles to meet future federal emission standards. The SCAQMD's FY 2015-16 Goals and Priority Objectives also includes development and demonstration of next-generation natural gas engines/hybrid vehicles with the goal of developing engines 75-90 percent cleaner than the current emissions standard for NOx. Additionally, options for integrating with hybrid systems and alternative fuels need to be explored to provide additional NOx reductions.

Fueling Infrastructure and Deployment

A key element for increased use of alternative fueled vehicles and resulting widespread acceptance is the availability of the supporting refueling infrastructure. The refueling infrastructure for gasoline and diesel fuel is well established and accepted by the driving public. Alternative, clean fuels such as alcohol-based fuels, propane, hydrogen, and even electricity are much less available or accessible, whereas natural gas and renewable fuels have recently become more readily available and cost-effective. Nonetheless, to realize emissions reduction benefits, alternative fuel infrastructure, especially fuels from renewable feedstocks, must be developed in tandem with the growth in alternative fueled vehicles. The objectives of the SCAQMD are to

expand the infrastructure to support zero and near-zero emission vehicles through the development, demonstration and installation of alternative fuel vehicle refueling technologies. However, this category is predominantly targeted at natural gas and renewable natural gas (RNG) infrastructure and deployment (electric and hydrogen fueling are included in their respective technology categories). Changes to the Carl Moyer Program as a result of SB 513 (chaptered October 2015) may help stimulate deployment of alternative and natural gas vehicles and related infrastructure. The Clean Fuels Program will continue to examine opportunities where current incentive funding is either absent or insufficient.

Health Impacts, Emissions and Fuel Studies

The monitoring of pollutants in the Basin is extremely important, especially when focused on (1) a particular sector of the emissions inventory (to identify the responsible technology) or (2) exposure to pollution (to assess the potential health risks). Several studies indicate that areas with high levels of air pollution can produce irreversible damage to children's lungs. This information highlights the need for further emissions and health studies to identify the emissions from high polluting sectors as well as the health effects resulting from these technologies. Considering the transition to alternative and renewable fuels, accelerated by federal and state requirements, it is important to understand the impacts that changing fuel composition will have on exhaust emissions and in turn on ambient air quality. This area focuses on exhaust emission studies, with a focus on NOx and PM2.5 emissions and a detailed review of other potential toxic tailpipe emissions, for alternative fuel and diesel engines, especially in the heavy-duty sector, as well as light- and heavy-duty engines that operate on renewable fuels or higher compression spark-ignited engines. These types of in-use emissions studies have found significantly higher emissions than certification values for heavy-duty diesel engines, depending on the duty-cycle.

Recently, the SCAQMD funded a study to evaluate PM2.5 formation from gasoline direct injection (GDI) engines and from varying ethanol blends to better understand the chemical composition of PM and health impacts of PM from a wider variety of fuels and vehicle technologies. The results from this study are expected to provide important information about the potential impacts of mid-level and high-level ethanol and iso-butanol blends on emissions and air quality during the near- and medium-term implementations of renewable fuel regulations, including assessing the health consequences of population exposure to GDI light-duty vehicle traffic sources in Southern California.

Stationary Clean Fuel Technologies

Given the limited funding available to support low emission stationary source technology development, this area has historically been limited in scope. To gain the maximum air quality benefits in this category, higher polluting fossil fuel-fired electric power generation needs to be replaced with clean, renewable energy resources or other advanced near zero-emission technologies, such as solar, wind, geo-thermal energy, bio-mass conversion and stationary fuel cells. Although combustion sources are lumped together as stationary, the design and operating principles vary significantly and thus also the methods and technologies for control of their emissions. Included in the stationary category are boilers, heaters, gas turbines and reciprocating engines. The key technologies for this category focus on using advanced combustion processes, development of catalytic add-on controls, alternative fuels and technologies and stationary fuel cells in novel applications.

Emission Control Technologies

This broad category refers to technologies that could be deployed on existing mobile sources, aircraft, locomotives, marine vessels, farm and construction equipment, cargo handling equipment, industrial equipment, and utility and lawn-and-garden equipment. The in-use fleet comprises the majority of emissions, especially the older vehicles and non-road sources, which are typically uncontrolled and unregulated, or controlled to a much lesser extent than on-road vehicles. The authority to develop and implement regulations for retrofit on-road and non-road mobile sources lies primarily with the U.S. EPA and CARB.

Low-emission and clean-fuel technologies that appear promising for on-road mobile sources should be effective at reducing emissions from a number of non-road sources. For example, immediate benefits are possible from particulate traps and selective catalytic reduction (SCR) that have been developed for diesel applications. Clean fuels such as natural gas, propane, hydrogen and hydrogen-natural gas mixtures may also provide an effective option to reduce emissions from some non-road applications. Reformulated gasoline, ethanol and alternative diesel fuels, such as biodiesel and gas-to-liquid (GTL), also show promise when used in conjunction with advanced emissions controls and new engine technologies.

Outreach and Technology Transfer

Since the value of the Clean Fuels Program depends on the deployment and adoption of the demonstrated technologies, outreach and technology transfer efforts are essential to its success. This core area encompasses assessment of advanced technologies, including retaining outside technical assistance as needed, efforts to expedite the implementation of low emission and clean fuels technologies, coordination of these activities with other organizations and information dissemination to educate the end user. Technology transfer efforts include support for various clean fuel vehicle incentive programs as well.

CLEAN FUELS PROGRAM BARRIERS, SCOPE AND IMPACT

Overcoming Barriers

Commercialization and implementation of advanced technologies come with a variety of challenges and barriers. A combination of real-world demonstrations, education, outreach and regulatory impetus and incentives is necessary to bring new, clean technologies to market. To reap the maximum emissions benefits from any technology, widespread deployment and user acceptance must occur. The product manufacturers must overcome technical and market barriers to ensure a competitive and sustainable business. Barriers include project-specific issues as well as general technology concerns.

Technology Implementation Barriers

- Viable commercialization path
- Technology price/performance parity with conventional technology
- Consumer acceptance
- Fuel availability/convenience issues
- Certification, safety and regulatory barriers
- Quantifying emissions benefits
- Sustainability of market and technology

Project-Specific Issues

- Identifying a committed demonstration site
- Overall project cost and cost-share using public monies
- Securing the fuel
- Identifying and resolving real and perceived safety issues
- Quantifying the actual emissions benefits
- Viability of the technology provider

Other barriers include reduced or shrinking research budgets, infrastructure and energy uncertainties and risks, sensitivity to multi-media environmental impacts and the need to find balance between environmental needs and economic constraints. The SCAQMD seeks to address these barriers by establishing relationships through unique public-private partnerships with key stakeholders; e.g., industry, end-users and other government agencies with a stake in developing clean technologies. Partnerships that involve all the key stakeholders have become essential to address these challenges in bringing advanced technologies from development to commercialization.

Each of these stakeholders and partners contributes more than just funding. Industry, for example, can contribute technology production expertise as well as the experience required for compatibility with process operations. Academic and research institutes bring state-of-the-technology knowledge and testing proficiency. Governmental and regulatory agencies can provide guidance in identifying sources with the greatest potential for emissions reduction, assistance in permitting and compliance issues, coordinating of infrastructure needs and facilitation of standards setting and educational outreach. Often, there is considerable synergy in developing technologies that address multiple goals of public and private bodies regarding the environment, energy and transportation.

Scope and Benefits of the Clean Fuels Program

Since the time needed to overcome barriers can be long and the costs high, both manufacturers and end-users tend to be discouraged from considering advanced technologies. The Clean Fuels Program addresses these needs by cofunding research, development, demonstration and deployment projects to share the risk of emerging technologies with their developers and eventual users.

Figure 4 provides a conceptual design of the wide scope of the Clean Fuels Program. As mentioned in the Core Technologies section, various stages of technology projects are funded not only to provide a portfolio of emissions technology choices but to achieve emission reduction benefits in the nearer as well as over the longer term.

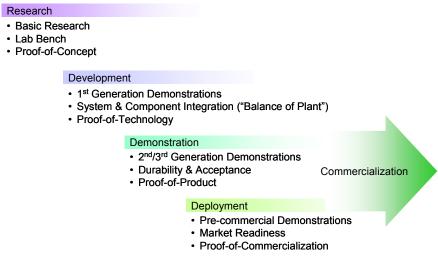


Figure 4: Stages of Clean Fuels Program Projects

Due to the nature of these advanced technology research, development, demonstration and deployment projects, the benefits are difficult to quantify since their full emission reduction potential may not be realized until sometime in the future, or perhaps not at all if displaced by superior technologies. Nevertheless, a good indication of the impact and benefits of the Clean Fuels Program overall is provided by this selective list of sponsored projects that have resulted in commercialized products or helped to advance the state-of-the-technology.

CNG Engine Development for Heavy-Duty Vehicles

- Emission Solutions: 7.6L (NG)
- Cummins Westport: low-NOx natural gas ISL G 8.9L engines (0.2 & 0.02 g/bhp-hr)
- Westport Power: ISX 15L (LNG), Westport GX 15 L (dual fuel)
- Detroit Diesel: Series 60G (CNG/LNG), Series 50G (CNG/LNG);
- John Deere: 6068 (CNG), 6081 (CNG);
- Mack: E7-400G (LNG); and
- Clean Air Partners/Power Systems (Caterpillar): 3126B (Dual Fuel), C-10 (Dual Fuel), C-12 (Dual Fuel).

≻Fuel Cell Development and Demonstrations

- Ballard Fuel Cell Bus (first of its kind);
- Light-duty passenger fuel cell vehicles (Toyota Mirai, Hyundai Tucson, Honda Clarity);
- SunLine Transit Agency Advanced Fuel Cell Bus projects;
- Commercial stationary fuel cell demonstration with UTC and SoCalGas (first of its kind); and
- Orange County Sanitation District hydrogen and combined heat and power generation from biogas using molten carbonate fuel cell technology (as well as their renewable hydrogen station).

Electric and Hybrid Electric Vehicle Development and Demonstrations

- EPRI hybrid vehicle evaluation study;
- Hybrid electric vehicle demonstrations with SCE, UC Davis and AC Propulsion;
- Plug-in Hybrid Electric Van with EPRI, DaimlerChrysler and SCE;
- Hybrid electric delivery trucks with NREL, FedEx and UPS;
- Proterra battery electric transit bus and fast charging system;
- Municipal battery electric utility truck;
- South Bay City Council of Governments' electric vehicle project;
- EVI/UPS electric truck;
- Plug-in hybrid work truck with Odyne Systems;
- Plug-in hybrid van and pickup with VIA Motors;
- BYD all-electric transit bus;
- LACMTA battery electric buses;
- Electric school buses with V2G capability; and
- TransPower battery electric heavy-duty truck and yard hostlers.

>Aftertreatment Technologies for Heavy-Duty Vehicles

- Johnson Matthey and Engelhard trap demonstrations on buses and construction equipment; and
- Johnson Matthey SCRT and SCCRT NOx and PM reduction control devices on heavy-duty on-road trucks.

SCAQMD played a leading or major role in the development of these technologies, but their benefits could not have been achieved without all stakeholders (i.e., manufacturer, end-users and government) working collectively to overcome the technology, market and project-specific barriers encountered at every stage of the research, development, demonstration and deployment process.

Strategy and Impact

In addition to the feedback and input detailed in Program Review (pages 1-2), the SCAQMD actively seeks additional partners for its program through participation in various working groups, committees and task forces. This participation has resulted in coordination of the SCAQMD program with a number of state and federal government organizations, including CARB, CEC, U.S. EPA and U.S. DOE and several of its national laboratories. Coordination also includes the AB 2766 Discretionary Fund Program administered by the Mobile Source Air Pollution Reduction Review Committee (MSRC), various local air districts, National Association of Fleet Administrators (NAFA), major local transit districts and local gas and electric utilities. The list of organizations with which the SCAQMD coordinates research and development activities also includes organizations specified in H&SC Section 40448.5.1(a)(2).

In addition, the SCAQMD holds periodic meetings with several organizations specifically to review and coordinate program and project plans. For example, the SCAQMD staff meets with CARB staff to review research and development plans, discuss project areas of mutual interest, avoid duplicative efforts and identify potential opportunities for cost-sharing. Periodic meetings are also held with industry-oriented research and development organizations, including but not limited to the California Fuel Cell Partnership (CaFCP), the California Stationary Fuel Cell Collaborative, the California Natural Gas Vehicle Partnership (CNGVP), the California Plug-In Electric Vehicle (PEV) Collaborative, the California Hydrogen Business Council (CHBC) the Electric Power Research Institute (EPRI), the Electric Drive Transportation Association (EDTA), the SoCalEV Collaborative, the West Coast Collaborative, which is part of the National Clean

Diesel Campaign, and the Transportation Research Board. The coordination efforts with these various stakeholders have resulted in a number of cosponsored projects.

Descriptions of some of the key contracts executed in CY 2015 are provided in the next section of this report. It is noteworthy that most of the projects are cosponsored by various funding organizations and include the active involvement of original equipment manufacturers. Such partnerships are essential to address commercialization barriers and to help expedite the implementation of advanced low emission technologies. Table 2 below lists the major funding agency partners and manufacturers actively involved in SCAQMD projects for this reporting period. It is important to note that, although not listed, there are many other technology developers, small manufacturers and project participants who make important contributions critical to the success of the SCAQMD program. These partners are identified in the more detailed 2015 Project Summaries (beginning page 35) contained within this report.

Research Funding Organizations	Major Manufacturers/Providers
California Air Resources Board	Cummins Inc.
California Energy Commission	Cummins Westport, Inc.
National Renewable Energy Laboratory	Ports of Los Angeles & Long Beach
U.S. Department of Energy	Gas Technology Institute
U.S. Environmental Protection Agency	Southern California Gas Company
	University of California Riverside/ CE-CERT
	Other California Universities (Irvine, LA, San Diego)
	US Hybrid Corporation
	Toyota

 Table 2: SCAQMD Major Funding Partners in CY 2015

The following two subsections broadly address the SCAQMD's impact and benefits by describing specific examples of accomplishments and commercial—or near-commercial—products supported by the Clean Fuels Program in CY 2015. Such examples are provided in the following sections on the Technology Advancement Office's Research, Development and Demonstration projects and Technology Deployment and Commercialization efforts.

Research, Development and Demonstration

Important examples of the impact of the SCAQMD research and development coordination efforts include: (a) development and demonstration of zero emissions goods movement technologies; and (b) development, integration and demonstration of ultra-low emission natural gas engines for heavy-duty vehicle applications.

Develop and Demonstrate Zero Emissions Goods Movement Technologies System

Heavy-duty diesel trucks in the South Coast Air Basin remain a significant source of emissions with adverse health impact, especially in the surrounding communities along the goods movement corridors near the Ports of Los Angeles and Long Beach and next to major freeways. In order to mitigate the impact and attain stringent federal ambient air quality standards for the

region, SCAQMD has been aggressively promoting and supporting the development and deployment of advanced zero emission cargo transport technologies, in partnership with the Southern California Regional Zero Emission Truck Collaborative, comprised of the Los Angeles Metropolitan Transportation Authority, the Ports of Los Angeles and Long Beach, the Southern California Association of Governments, and the Gateway Cities Council of Governments.

With a grant from the DOE's Zero Emission Cargo Transport (ZECT) Program in 2012, the SCAQMD has been working with Transportation Power (TransPower) and US Hybrid, locally based EV system integrators, to develop Class 8 battery electric trucks (BETs) for demonstration in real-world drayage operations evaluate the trucks' to performance and durability to



Figure 5: TransPower Electric Drive Drayage (EDD) Trucks

support demanding drayage duty cycles. To date, TransPower has completed and deployed four BETs in field demonstration with drayage fleets at the Ports of Los Angeles and Long Beach, including Total Transportation Services and California Cartage Company. With an estimated range of 80–100 miles, these BETs are deployed in near-dock and local operations within a 20-mile radius from the Ports and have been providing dependable service with positive feedback from fleet drivers on its quiet and smooth operations. US Hybrid is currently on-road testing their first BET with a plan to deploy it in drayage service in early 2016.

Building on the success of the ZECT project, SCAQMD applied for and received a \$9.75 million grant from the DOE in 2014 to demonstrate additional electric drayage truck technologies. This project, termed ZECT II, launched in 2015 and involves development and demonstration of five different electric truck platforms, consisting of three fuel cell electric trucks and two types of plug-in hybrid electric trucks (PHETs) as follows:

- BAE Systems will develop a battery electric truck with a hydrogen fuel cell range extender leveraging the expertise of BAE Systems and Ballard Power Systems to test their hybrid electric fuel cell propulsion system, currently used for transit buses, in drayage applications. The truck will have 30 kg of hydrogen on-board to provide approximately 110 miles of range per fueling.
- TransPower will develop two battery electric trucks with hydrogen fuel cell range extenders. These trucks will utilize TransPower's proven ElecTruck drive system with a small fuel cell to provide approximately 150 miles of range. One truck will be equipped with a 30 kW fuel cell and the other with a 60 kW fuel cell, enabling a direct comparison of both variants.
- US Hybrid will develop two fuel cell electric trucks powered by an 80 kW hydrogen fuel cell generator. Each truck is estimated to have 20 kg of hydrogen storage to provide up to 150 miles in drayage operations.
- BAE Systems and Kenworth will develop one PHET with a CNG range extender and catenary-connect capability. The proposed technical concept provides a well-balanced blend of all-electric and CNG-based operation to provide a system that can operate in zero emission (all-electric) mode and in a conventional hybrid electric mode using CNG.

• International Rectifier will develop a PHET, and ultra-fast chargers for use in or near the Ports. The vehicle concept will be capable of operating in a zero emission (all-electric) mode in and around the Ports of Los Angeles and Long Beach. Outside that predetermined Zero Emissions Zone, the Class 8 PHET would switch from all-electric to hybrid-electric mode where the vehicle would operate at higher efficiencies to reduce diesel fuel consumption.

In addition, two PHET technologies were recently added to the 2012 ZECT project having replaced two of the four originally awarded technologies. TransPower will develop two CNG PHETs, each with 30-40 miles of all-electric range (AER) and 150-200 miles of total operating range. US Hybrid will also develop three LNG PHETs by converting LNG drayage trucks with their proprietary hybrid electric drive system to provide up to 40 miles in AER mode and 150-200 miles of range.

Between the ZECT and ZECT II projects, SCAQMD has engaged leading EV integrators and truck OEMs to develop a variety of electric drayage trucks, consisting of eleven zero emission trucks – six battery electric and five fuel cell electric trucks – and seven hybrid electric trucks with extended range using CNG, LNG or diesel ICEs. These demonstrations will yield valuable data and understanding of the capability, benefits as well as limitations of advanced electric trucks in real world drayage operations and help to accelerate the introduction of the technologies into the cargo transport sector. Furthermore, leveraging the technologies and expertise gained from the ZECT projects, SCAQMD will seek opportunities to fund a larger-scale demonstration of zero and near-zero emission cargo transport trucks including a recent application to a grant solicitation from CARB for Zero Emission Drayage Truck Projects under the Low Carbon Transportation Greenhouse Gas Reduction Fund Investment. The project, awarded in early 2016, will demonstrate up to 43 zero emission capable drayage trucks involving four major truck OEMs: BYD, Kenworth, Peterbilt, Volvo, in a truly comprehensive statewide demonstration

program in partnership with four other major air districts: Bay Area AQMD, San Joaquin Valley APCD, San Diego APCD and Sacramento Metropolitan AQMD. These trucks will provide drayage service at various ports throughout the state.

Lastly, SCAQMD has an ongoing project with Siemens Industry Inc. (Siemens) to develop and demonstrate an overhead catenary system (OCS) using their eHighway wayside power technology for heavy-duty trucks. The demonstration involves one mile of catenary power lines in both directions along Alameda Street in the City of Carson with four catenary accessible trucks from Volvo, TransPower and BAE/Kenworth. The trucks will demonstrate a variety of architectures such as diesel hybrid, CNG hybrid and battery electric. The hybrid drive system will extend the operating range of the truck beyond the all-electric range of the catenary system, enabling the truck to perform regional dravage operations and bridge gaps in catenary infrastructure as it is deployed on a regional level. The Siemens' pantograph system will allow for seamless connection and detachment from the catenary power source. When entering the catenary system corridor, the pantograph system will verify the presence of catenary lines and allow the



Figure 6: Drayage Truck Connected to Demonstration Catenary System in Carson

driver to raise the pantograph from within the cab of the truck. Upon leaving the catenary lane, the pantograph will automatically retract and the truck will switch to on-board power systems.

The infrastructure portion of the project is in the construction phase with a scheduled completion in the second quarter of 2016. Both trucks-one battery electric and one CNG hybrid-being developed by TransPower were completed in 2015; the Volvo diesel hybrid truck will be completed in mid-2016; and the BAE/Kenworth CNG hybrid truck is scheduled for completion in 2017. In October 2015, one of TransPower's trucks was tested at an off-the-street OCS track in Carson to validate the truck's ability to operate on battery and catenary power.

Develop and Demonstration Ultra Low-Emission Natural Gas Engines for Heavy-Duty Vehicle Applications

Heavy-duty on-road diesel vehicles are currently one of the largest sources of NOx emissions in the South Coast Air Basin. This source category is still projected to be one of the largest



contributors to NOx emissions, even as the legacy fleet of older and higher polluting vehicles are retired from operation and replaced by the vehicles meeting the most stringent emission levels required by 2010 emissions standards. NOx reductions in excess of 50% will be needed to meet future federal ambient air quality standards for ozone. The development of ultra-low NOx emission engines would significantly reduce emissions from this source category and assist the region in meeting federal ambient air quality standards. Diesel engines have not achieved the necessary ultra-low emission levels. Natural gas engines, however, have shown promise of achieving

Figure 7: ISL-G Near-Zero Natural Gas Engine

significant emission reductions from the current 0.2 g/bhp-hr NOx standard. In addition, since natural

engines are currently in mass production, it is likely that commercial scale adoption of ultra lowemission natural engines can be achieved sooner and at lower cost than will be possible with zero emission technologies.

SCAQMD, with funding from the California Energy Commission and the Southern California Gas Company, awarded contracts to three companies to develop engines meeting the CARB

Optional NOx Standard of 0.02 g/bhp-hr. The engines cover a range of power and vehicle applications that represent a significant fraction of the on-road heavy duty vehicle population. During 2015, the Cummins Westport 8.9-liter ISL-G NZ (near zero) engine was certified by CARB as meeting the 0.02 g/bhp-hr NOx standard. This engine will begin production in 2016 and will be available to fleets ordering vehicles for delivery later this year as well as those repowering existing vehicles. The technology developed for the ISL engine will be applied in a new project with Cummins Westport to develop and demonstrate the 11.9-liter ISX-G Engine engine to meet the 0.02 g/bhp-hr NOx standard.



Figure 8: Truck with ISL-G-NZ Ultra Low-NOx Engine

Development of a new Cummins 15-liter natural gas engine was carried out in 2015 with results also showing emissions below the 0.02 g/bhp-hr level. Commercialization of this engine,

however, is likely to occur later than the Cummins Westport engines due to higher investment needed for a new engine.

Finally, a team consisting of the Gas Technology Institute, Power Solutions International (PSI) and Ricardo will develop an ultra-low NOx emission engine based on PSI's existing 8.8-liter V8 natural gas engine. This engine is suitable for Class 4-6 trucks currently powered by diesel engines. This project is co-sponsored by SCAQMD and the Southern California Gas Company.

In order to establish market demand for these near zero engines, CARB also adopted optional emission standards of 0.02 g/bhp-hr to enable incentive funding and is modifying incentive programs to increase the funding limits. SCAQMD has issued a program announcement offering funds for these vehicles and expects to provide significant funding as more engine become available.

Technology Deployment and Commercialization

One function of the Clean Fuels Program is to help expedite the deployment and commercialization of low and zero emission technologies and fuels needed to meet the requirements of the AQMP control measures. In many cases, new technologies, although considered "commercially available," require assistance to fully demonstrate the technical viability to end-users and decision-makers.

The following projects contracted during the CY 2015 reporting period illustrate the impact of the SCAQMD's technology deployment and commercialization efforts and include: (a) electric/hybrid vehicle and infrastructure deployment and commercialization efforts in 2015; and (b) hydrogen infrastructure rollout efforts in 2015.

Electric/Hybrid Vehicle and Infrastructure Deployment and Commercialization Efforts in 2015

The continued deployment of near-zero and zero emission electric and hybrid electric vehicles and technologies along with the supporting infrastructure play a key role in moving us ever closer to attaining future air quality standards. Several contracts executed in 2015 bring their own unique contribution to the proliferation of future electric/hybrid technologies and infrastructure.

NREL's Commercial Zero Emission Vehicle (ComZEV) project aims to facilitate the reduction of NOx and GHG emissions through the development of a plan for the commercialization of advanced vehicle technologies in this region. A detailed technology and economics-based roadmap will be developed, focusing on identifying barriers and opportunities to match advanced technology options to key commercial medium- and heavy-duty vehicle vocations. The technology options to be evaluated include battery electric vehicles, fuel cell vehicles, catenary/induction electric propulsion systems, and compressed and liquid natural gas internal combustion engines and gas turbines.

The University of California Riverside (UCR) campus serves as a research test bed and demonstration site for plug-in vehicles that can be directly integrated with smart grid technology. A contract was executed with the UCR/College of Engineering-Center for Environmental Research & Technology (CE-CERT) for the evaluation and demonstration of advanced charging technologies and associated vehicle activity to further demonstrate the effectiveness of PEV deployment as part of a smart grid system. PEV utilization will be greatly increased by incorporating advanced charging strategies and/or technologies such as V2G.



Figure 9: UCR's 4 MWs of Photovoltaic Panels Constructed for Sustainable Integrated Grid Initiative

The rapid growth in the number of PEVs purchased and the announcement of longer range (larger battery) PEVs highlights the greater need for residential charging. To help meet the goals set forth in the ZEV Action Plan, further incentives for PEV infrastructure are needed. In response to this need, SCAQMD Residential launched а EV Charging Incentive Pilot Program in December 2015. This program utilizes \$500,000 in Clean Fuels

funding and \$500,000 in Mobile Source Air Pollution Reduction Review Committee (MSRC) funding. Rebates of \$250 or \$500 for low-income residents are offered to offset the cost of hardware for residential Level 2 chargers. Costs for Level 2 chargers range from \$400 to \$800 per charger. An online application streamlines the process to apply for the incentives. Chargers will need to be permanently installed and in place for a minimum of three years. Tenants in multi-family dwellings or condominiums can also have chargers installed with the permission of the property owner.

The Rebate Program also includes resources coordinated through local utility agency programs, so that applicants are automatically steered to their local utility EV charger rebate program if a



Figure 10: Residential Level 2 EV Charger

more generous incentive towards hardware and/or installation costs is offered by the local utility. Applicants that are ineligible for their local utility rebate program will be able to apply to the SCAQMD rebate program. Outreach efforts to local residents and to residents of disadvantaged communities are being launched to provide information about the EV charger rebate program through the SCAQMD website, social media, environmental fairs and events, conferences on alternative fuel technologies, and targeted outreach to EV dealers, local governments and councils of government, charger EV manufacturers and OEMs. With current funding, up to 4,000 rebates could be offered, with

potentially additional funding being made available to expand the pilot EV charger program.

Additional efforts were undertaken in 2015 with several contracts executed out of the Clean Fuels Fund for the installation of electric charging infrastructure and site selection for a DC fast charge network. More information on these various contracts can be found in the Project Summaries section (page 35).

As a separate initiative to accelerate the adoption of PEVs, particularly for residents of disadvantaged communities, SCAQMD started offering the Replace Your Ride Program in July 2015 to help residents purchase newer, less polluting vehicles. This Enhanced Fleet Modernization Program (promoted as the Replace Your Ride Program) was funded with \$4.23 million from SCAQMD, MSRC, CARB Greenhouse Gas Reduction Relief Fund (GGRF) and AB 118 Enhanced Fleet Moderation Program, but greatly complements efforts being undertaken

through the Clean Fuels Program. This Program quickly became oversubscribed and has a significant waiting list. In December 2015, the SCAQMD was awarded another \$6.4 million in GGRF funding (see Table 5, page 33) to extend the Replace Your Ride Program and make it available to additional residents of disadvantaged communities.

In another effort complementing the Clean Fuels Program, the SCAQMD is upgrading the workplace charging at its Diamond Bar Headquarters to provide more workplace, guest and public charging. SCAQMD currently has 26 Level 2 chargers and one DC fast charger which were installed between 2011 and 2012. However, with well over 60 PEVs owned by SCAQMD employees, as well as the many visitors and members of the public who charge at the facility, the number of available chargers is not sufficient to meet demand. To address this concern SCAQMD initiated plans for the upgrade and expansion of its PEV support infrastructure by the installation of up to 110 level 2 EV chargers at its facility. As the host of multiple alternative fueling stations including Level 2 and DC fast chargers, hydrogen and CNG infrastructure, there is a need to provide additional charging but to also manage the various sources of demand at the facility to avoid demand charges during peak hours in the summer months. The SCAQMD's upgrade, including networking and integration into the building's energy management system, is intended to act as a showcase to promote EV charging and will include development of a set of best practices on installation of workplace charging, policies and integration with demand response, as a guidance document for larger facilities.

Collectively, these PEV and infrastructure projects enable greater penetration of these technologies to the mainstream general public and to residents of disadvantaged communities,



going beyond the early adopter stage, and allowing them to experience first-hand how these technologies work. Automakers and EV infrastructure manufacturers, government agencies, and advocacy groups will gain valuable feedback into how to continue to improve and further refine these technologies.

Figure 11: Existing Level 2 Chargers under SCAQMD's Solar Carport

Hydrogen Infrastructure Rollout Efforts in 2015

The SCAQMD has identified the development and deployment of hydrogen infrastructure as one of the agency's top priorities in order to attain federal air quality standards. Hydrogen infrastructure is consistent with the goods movement strategy for zero-emission trucks and infrastructure proposed in SCAG's 2016 Goods Movement Appendix to the Draft 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), released December 2015, as well as the joint CARB, SCAQMD and SJVAPCD "Vision for Clean Air: A Framework for Air Quality and Climate Planning". Zero-emission truck deployment is proposed through the year 2040 to meet goals outlined in the Draft 2016-2040 RTP/SCS.

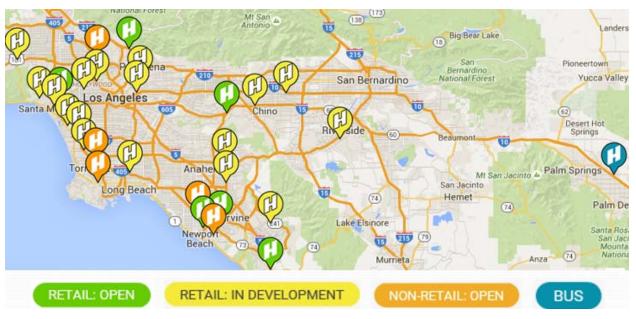


Figure 12: Hydrogen Infrastructure Rollout in the SCAQMD

Source: California Fuel Cell Partnership - http://cafcp.org/stationmap

As part of the planned statewide rollout of new and upgraded hydrogen fueling stations, there are seven open retail stations, five open non retail stations, and 20 stations and a mobile fueler in the process of being constructed and/or upgraded within the South Coast Air Quality Management District in the 2016-2017 timeframe. The newest rollout of hydrogen fueling stations are those that are retail hydrogen stations, typically embedded within an existing gasoline station. Examples of recently opened retail hydrogen stations include the Arco station in La Canada Flintridge and Chevron station in West Los Angeles; retail stations to be opened in 2016-2017 include the Shell station in Torrance, 76 station in Ontario, and Hyundai Chino station. Examples of retail hydrogen stations are shown below.



Figure 13: La Canada Flintridge Retail Hydrogen Station, Located at Arco Gas Station



Figure 14: West Los Angeles Retail Hydrogen Station, Located at Chevron Gas Station

Retail hydrogen stations include point of sale (POS) dispensers capable of conducting retail transactions for the sale of hydrogen on a per kg basis using credit cards, fueling at 350 bar and 700 bar, 35 kg/day in Type A for 70 Mpa fills, and nominal capacity of 100 kg - 200 kg/day. These stations would comply with SAE J2601:2014 and J2719:2011 standards for hydrogen



fueling protocol and hydrogen quality. Collectively, the stations would meet Renewable Portfolio Standard (RPS) requirements for providing hydrogen fuel with at least 33% renewable hydrogen. Some of the stations such as the Hyundai Chino station are providing 100% renewable fuel. The renewable hydrogen requirement is fulfilled by solar, energy storage, or renewable energy certificates providing 100% renewable electricity to the station such as for local generation using an electrolyzer or reformer, or by the delivery of

Figure 15: Torrance Retail H2 Station, Located at Shell Gas Station

33% or 100% renewable hydrogen produced by a central natural gas reformer, or by a mix of local generation and delivered hydrogen.

California Department of Food and Agriculture, Division of Weights and Measures (DMS) must pre-certify POS dispensers so that stations can legally sell hydrogen by the kg to refuel fuel cell vehicles. DMS convened a Pre-Rulemaking workshop in August 2013 and further developed test procedures for certifying dispensers to sell hydrogen, while the Governor's Office fast tracked legislation in April 2014. CEC, through its Alternative and Renewable Fuel and Vehicle Technology Program provided \$4 million to DMS to develop test standards, equipment, and instrumentation for the commercial sale of hydrogen. This has allowed DMS to carry out field test procedures for hydrogen dispensers as new stations are commissioned. Several other agencies have supported the field testing effort including CARB (\$50,000), California Fuel Cell Partnership (\$150,000), CEC (\$150,000), and SCAQMD (\$100,000). Several stations have already undergone field testing during the station opening process to become designated as open retail or open non-retail stations; these stations include West Sacramento, Diamond Bar, West Los Angeles, University of California Irvine, Coalinga, San Juan Capistrano, San Jose, Costa, Mesa, and Santa Monica (Cloverfield Blvd.). DMS will produce a final report of its field testing effort on hydrogen dispensers in October 2016.



Figure 16: Orange County Sanitation District Non-Retail H2 Station, Located with CNG Station

The intent of the new rollout of retail hydrogen stations is to accelerate the deployment of fuel cell vehicles in the near-term, and for fuel cell trucks and buses in the longer term, once standards for hydrogen fueling protocol and hydrogen quality are worked out between OEMs, station operators, government agencies, and other key stakeholders. [This Page Intentionally Left Blank]

2015 FUNDING & FINANCIAL SUMMARY

The SCAQMD Clean Fuels Program supports clean fuels and technologies that appear to offer the most promise in reducing emissions, promoting energy diversity, and in the long-term, providing cost-effective alternatives to current technologies. In order to address the wide variety of pollution sources in the Basin and the need for reductions now and in the future, using revenue from a \$1 motor vehicle registration fee (see Program Funding on page 6), the SCAQMD seeks to fund a wide variety of projects to establish a diversified technology portfolio to proliferate choices with the potential for different commercial maturity timing. Given the evolving nature of technology and changing market conditions, such a representation is only a "snapshot-in-time," as reflected by the projects approved by the SCAQMD Governing Board.

As projects are approved by the SCAQMD Governing Board and executed into contracts throughout the year, the finances may change to reflect updated information provided during the contract negotiation process. As such, the following represents the status of the Clean Fuels Fund as of December 31, 2015.

Funding Commitments by Core Technologies

The SCAQMD continued its successful leveraging of public funds with outside investment to support the development of advanced clean air technologies. During the period January 1 through December 31, 2015, a total of 78 contracts, projects or studies that support clean fuels were executed or amended, as shown in Table 3 (page 30). The major technology areas summarized are (listed in order of funding priority during the CY): engine systems, electric/hybrid technologies and infrastructure, hydrogen and mobile fuel cell technology and infrastructure, outreach and technology transfer, fuels and emission studies, emission control technologies, and fueling infrastructure and deployment. The distribution of funds based on technology area is shown graphically in Figure 17 (page 28). This wide array of technology support represents the SCAQMD's commitment to researching, developing, demonstrating and deploying potential near-term and longer-term technology solutions.

The project commitments that were contracted or purchased for the 2015 reporting period are shown below with the total projected project costs:

•	SCAQMD Clean Fuels Fund Contribution	\$10,659,033
•	Total Cost of Clean Fuels Projects	\$47,284,929

Each year, the SCAQMD Governing Board approves funds to be transferred to the General Fund Budget for Clean Fuels administration. For 2015, the Board transferred \$1 million for workshops, conferences, co-sponsorships and outreach activities as well as postage, supplies and miscellaneous costs for participation in special conferences. Only the funds committed by December 31, 2015, are included within this report. Any portion of the Clean Fuels Funds not spent by the end of Fiscal Year 2015-16 ending June 30, 2016, will be returned to the Clean Fuels Fund.

Partially included within the SCAQMD contribution are supplemental sponsorship revenues from various organizations that support these technology advancement projects. This supplemental revenue for pass-through contracts executed in 2015 totaling \$2.75 million is listed within Table 4 (page 33).

Appendix B lists the 112 Clean Fuels Fund contracts that were open and active as of January 1, 2016.

For Clean Fuels executed and amended contracts, projects and studies in 2015, the average SCAQMD contribution is approximately 22 percent of the total cost of the projects, identifying that each dollar from the SCAQMD was leveraged with nearly four dollars of outside investment. The typical leverage amount is \$3-\$4 for every \$1 of SCAQMD Clean Fuels funds, but 2015 notably had a couple of significant contracts, significant both in funding and in the impact they hopefully will make in strides toward developing and commercializing clean transportation technologies.

During 2015, the distribution of funds for SCAQMD executed contracts, purchases and contract amendments with additional funding for the Clean Fuels Program totaling approximately \$10.7 million are shown in **Figure 17** below.

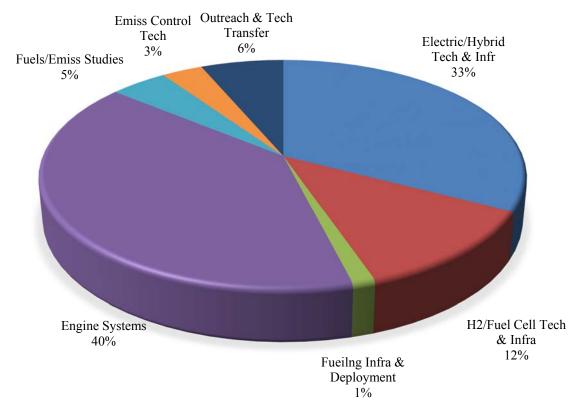


Figure 17: Distribution of Funds for Executed Clean Fuels Projects CY 2015 (\$10.7 million)

Table 3 (page 30) provides a breakdown of this \$10.7 million in executed contracts. Table 4 (page 33) provides information on outside funding recognized and received into the Clean Fuels Fund (\$2.75 million) for contracts executed in CY 2015. Additionally, the SCAQMD continued to seek funding opportunities and Table 5 (page 33) lists the additional \$8,560,056 awarded in 2015 for projects that will be implemented as part of the Clean Fuels Program or which align well or will be complementary to the Clean Fuels Program.

Review of Audit Findings

State law requires an annual financial audit after the closing of each SCAQMD's fiscal year. The financial audit is performed by an independent Certified Public Accountant selected through a competitive bid process. For the fiscal year ended June 30, 2015, the firm of Simpson and

Simpson, CPAs conducted the financial audit. As a result of this financial audit, a Comprehensive Annual Financial Report (CAFR) was issued. There were no adverse internal control weaknesses with regard to SCAQMD financial statements, which include the Clean Fuels Program revenue and expenditures. Simpson and Simpson CPAs gave the SCAQMD an "unmodified opinion," the highest obtainable. Notably, the SCAQMD has achieved this rating on all prior annual financial audits.

Project Funding Detail by Core Technologies

The 78 new and continuing contracts, projects and studies that received SCAQMD funding in 2015 are summarized in Table 3, together with the funding authorized by the SCAQMD and by the collaborating project partners.

Table 3: Contracts Executed or Amended (w/\$) between Janu	uary 1 & December 31, 2015
------------------------------------------------------------	----------------------------

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
Electric/H	ybrid Technologies a	and Infrastructure				
10659	Electric Power Research Institute	Data Collection to Further Evaluate Performance and Operational Benefits to Optimize Fleet of Medium-Duty Plug-In Hybrid Vehicles	07/27/10	09/30/16	250,000	844,678
13433	U.S. Hybrid Corporation	Develop and Demonstrate Two Class 8 Zero-Emission Electric Trucks	06/26/13	09/30/17	75,000	150,000
14052	Altec Capital Services, LLC	Lease of Two Plug-In Hybrid Electric Vehicles	01/02/15	01/01/20	61,302	61,302
14336 & 15665	Los Angeles Department of Water & Power & City of Santa Monica	Install and Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project)	07/31/15	04/03/16	0	1,383,409
15382	ChargePoint, Inc.	Install Electric Charging Infrastructure	01/23/15	01/22/17	162,000	162,000
15448	University of California Los Angeles	Site Selection for DC Fast Charge Network	04/21/15	04/30/16	10,000	10,000
15650	University of California San Diego	Develop and Demonstrate Forecasting for Larger Solar Arrays with Storage and EV Charging	07/17/15	01/16/18	98,908	1,655,278
15680	National Renewable Energy Laboratory	ComZEV – Develop Detailed Technology and Economics- Based Assessment for Heavy- Duty Advanced Technology Development	08/28/15	08/27/16	500,000	500,000
16022	Gas Technology Institute	ZECT II: Develop and Demonstrate One Class 8 CNG Hybrid Electric Drayage Truck	12/04/15	06/30/20	1,578,802	5,627,319
16046	Transportation Power, Inc.	ZECT: Develop and Demonstrate Two Class 8 CNG Plug-In Hybrid Electric Drayage Trucks	12/04/15	09/30/17	195,326	2,103,446
16047	U.S. Hybrid Corporation	ZECT: Develop and Demonstrate Three Class 8 LNG Plug-In Hybrid Electric Drayage Trucks	11/06/15	09/30/17	22,896	1,996,675
Direct Pay	Varies	Establish Residential EV Charging Incentive Pilot Program	09/04/15	09/04/15	500,000	1,000,000
Direct Pay	Clean Fuel Connection, Inc.	EV Charger Installation	03/18/15	03/18/15	5,196	5,196
Direct Pay	ATVLS, Inc.	EV Charger Installation	07/01/15	07/01/15	21,155	21,155

Hydrogen and Mobile Fuel Cell Technologies and Infrastructure

10046	Air Products and Chemicals, Inc.	Develop and Demonstrate Renewable Hydrogen Energy and	12/21/09	11/01/15	75,000	275,000
13155	Fletcher Jones Motor Cars Inc.	Fueling Station Lease Two F-Cell Mercedes Benz Fuel Cell Vehicles for Two Years	02/08/13	02/08/17	14,598	14,598

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
Hydrogen	and Mobile Fuel Cel	I Technologies and Infrastruct	ure (cont'	d)		
13400	Energy Independence Now	Develop Hydrogen Station Investment Plan and Assess Policies and Incentives for Implementation	04/05/13	12/31/15	80,000	125,000
14684	California Department of Food and Agriculture, Division of Measurement Standards	Conduct Hydrogen Station Site Evaluations for Site Certifications for Commercial Sale of Hydrogen	12/11/15	12/31/16	100,000	450,000
15596	US Hybrid	Transfer of Ownership of One Gaseous Hydrogen Electrolyzer, Compressor, Storage Tanks and Associated Hydrogen Equipment	04/15/15	12/31/15	0	0
15599	City of Burbank	Bill of Sale and Transfer of Hydrogen Station Equipment	03/19/15	03/19/15	0	0
15609	ITM Power, Inc.	Installation of Riverside Renewable Hydrogen Fueling Station	10/06/15	10/05/19	200,000	2,934,184
15611	Ontario CNG Station, Inc.	Installation of Ontario Renewable Hydrogen Fueling Station	07/10/15	07/09/20	200,000	2,710,000
15619	H2 Frontier Inc.	Installation of Chino Renewable Hydrogen Station	12/04/15	12/03/20	200,000	4,666,979
15641	Hardin Hyundai	Three-Year Lease of 2015 Tucson Fuel Cell Vehicle	06/15/15	06/14/18	22,862	22,862
15666	Bevilacqua-Knight, Inc.	Participate in CaFCP for CY 2015 and Provide Support for Regional Coordinator	01/01/15	12/31/15	137,800	2,080,808
16039	Lawrence Livermore National Laboratory	Demonstrate Prototype Hydrogen Sensor and Electronics Package	12/10/15	02/09/17	175,000	350,000
16151	Toyota Motor Sales USA	No-Cost Loan of 2015 Toyota Mirai Fuel Cell Vehicle	12/15/15	01/05/16	0	0
16171	Longo Toyota	Three-Year Lease of 2015 Toyota Mirai Fuel Cell Vehicle	12/15/15	12/14/18	24,567	24,567
Direct Pay	Gas Technology Institute	Repair Hydrogen Quality Sampling Adaptor	08/11/15	08/11/15	2,410	2,410
Direct Pay	Toyota Motor Sales USA	Purchase One 2016 Toyota Mirai Fuel Cell Vehicle	12/01/15	12/01/15	56,688	56,688

Engine Systems

15626	Cummins Westport, Inc.	Develop, Integrate and Demonstrate Ultra Low-Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	07/10/15	12/31/16	3,500,000	7,233,000
15632	Gas Technology Institute	Develop Ultra Low-Emission Natural Gas Engine for On-Road Medium-Duty Vehicles	09/01/15	06/30/17	750,000	1,800,000

Fueling Infrastructure and Deployment (NG/RNG)

16076	Coachella Valley	Purchase and Deploy One Heavy-	12/01/15	11/20/19	140,000	140,000
	Association of	Duty CNG Paratransit Vehicle				
	Governments					

Table 3: Contracts Executed or Amended (w/\$) between January 1 & December 31, 2015

			Start	End	SCAQMD	Project
Contract	Contractor	Project Title	Term	Term	\$	Total \$

Fuels/Emissions Studies

15607	University of California Riverside/CE-CERT	Innovative Transportation System Solutions for NOx Reductions in Heavy-Duty Fleets	12/19/15	11/30/16	79,980	139,980
15623	University of California Riverside/CE-CERT	Ozone and SOA Formation from Gasoline and Diesel Compounds	10/02/15	06/30/16	75,000	480,338
15625	University of California Riverside/CE-CERT	Evaluate SOA Formation Potential from Light-Duty GDI Vehicles	10/02/15	06/30/17	149,972	224,972
15636	University of California Riverside/CE-CERT	Evaluate PEV Utilization Through Advanced Charging Strategies in a Smart Grid System	12/15/15	02/14/17	170,000	270,000

Emission Control Technologies

15347	West Virginia	Develop Retrofit Technology for	01/09/15	11/08/15	340,000	490,000
	University Research	Natural Gas Engines and In-Use				
	Corporation	Emissions Testing of On-Road				
		Heavy-Duty Trucks				

Outreach & Technology Transfer

05128	Mid-Atlantic Research	Technical Assistance for	08/08/05	03/31/17	30,000	30,000
	Institute LLC	Development, Outreach and				
		Commercialization of Advanced				
		Heavy-Duty and Off-Road				
		Technologies				
13194	Clean Fuel	Technical Assistance with	12/07/12	09/30/16	60,000	60,000
	Connection, Inc.	Alternative Fuels, Renewable				
		Energy and EVs, Program				
		Activities for AFVs, Lawn Mower Exchange, Conferences and				
		Outreach				
13198	Gladstein, Neandross	Technical Assistance with	12/14/12	12/31/16	60,000	60,000
10100	& Associates LLC	Alternative Fuels, Emissions	12/14/12	12/01/10	00,000	00,000
		Analysis and On-Road Sources				
14185	Three Squares Inc.	Conduct Education Outreach for	04/11/14	10/31/16	40,000	40,000
	-	the Basin DC Fast Charging				
		Network Project				
15507	Jerald Cole	Technical Assistance with	01/09/15	01/08/17	30,000	80,000
		Alternative Fuels, Emissions				
		Analysis, and Combustion				
45540		Technologies	00/07/45	00/04/40	74 500	74 500
15516	Cordoba Corporation	Technical Assistance with	03/27/15	03/31/18	74,500	74,500
		Construction of Zero Emissions Goods Movement Demonstration				
		Project				
15610	Goss Engineering, Inc.	Conduct Engineering Services at	06/02/15	06/01/16	50,000	50,000
10010		SCAQMD Headquarters	00,02,10	00/01/10	00,000	00,000
16055	University of California	Cosponsor Solar Decathlon –	11/05/15	02/29/16	50,000	730,000
10000	Irvine	Develop and Demonstrate Solar-	11/00/10	02/23/10	50,000	100,000
		Powered House at 2015 U.S.				
		DOED Solar Decathlon				
Direct	Transportation	Participation for CY 2015	01/01/15	12/31/15	32,500	256,000
Pay	Research Board	Membership in Transportation			, -	,
-		Research Board				

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
Direct Pay	Various	Cosponsor 24 Conferences, Workshops & Events plus 5 Memberships and 1 Subscription	01/01/15	12/31/15	257,571	5,892,585

Table 3: Contracts Executed or Amended (w/\$) between January 1 & December 31, 2015

Table 4: Supplemental Grants/Revenue Received into the Clean Fuels Fund (31) in CY 2015

Revenue Agreement #	Revenue Source	Project Title	Contractor	SCAQMD Contract #	Award Total \$
#14146	Southern California Gas Company	Develop, Integrate and Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty	Cummins Westport	15626	500,000
#15022 & #15574	CEC/ AB 118 600-13-008 & PIER 500-12-012	Develop, Integrate and Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	Cummins Westport	15626	2,000,000
#15683	Southern California Gas Company	Develop Detailed Technology and Economics Based Assessment for Heavy-Duty Advanced Technology Development	National Renewable Energy Laboratory	15680	250,000
		CAQMD into the Clean Fuels Fun ted during the reporting CY (201			2,750,000

if the pass-through contract was executed during the reporting CY (2015).

Table 5: Summary of Federal & State Funding Awarded between Jan. 1 & Dec. 31, 2015

Awarding Entity or Program	Award Date	Purpose	Contractors	Award Total \$/Fund
U.S. EPA/ CATI	06/05/15	Develop and Demonstrate Warehouse Rooftop Solar Systems Incorporating Storage and EV Charging; Develop and Demonstrate EV Charging Infrastructure to Support Class 8 Electric Drayage Trucks	University of California San Diego; Transportation Power Inc.	500,000 Fund 17
U.S. EPA/ DERA	08/12/15	On-Road Heavy-Duty Vehicle and Transport Refrigeration Unit Engine Replacement Projects; School Bus Replacement Projects	Multiple Contractors/School Districts	1,160,056 Funds 17 & 80
CARB or BAR	12/29/15	Implementation of the Retire and Replace Component of Enhanced Fleet Modernization Program	Various	1,400,000 Fund 56
CARB or BAR	12/29/15	Implementation of Vehicle Retire and Replace Plus- Up Program	Various	5,000,000 Fund 56
Southern California Gas Company	10/02/15	Develop, Integrate and Demonstrate 11.9L Ultra Low-Emission Natural Gas Engine for On-Road Heavy-Duty Vehicles	Cummins Westport Inc.	500,000 Fund 31
		sive summary of revenue <u>awarded</u> to SCAQMD during art of, or complementary to, the Clean Fuels Program,		8,560,056

the pass-through contract has been executed.

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Project Summaries by Core Technologies

The following represents summaries of the contracts, projects and studies executed, or amended with additional dollars, in 2015. They are listed in the order found in Table 3 below by category and contract number. The summaries provide the project title, contractors and subcontractors, SCAQMD cost-share, cosponsors and their respective contributions, contract term and a description of the projects as required by H&SC Section 40448.5.1(d).

Electric/Hybrid Technologies

10659: Data Collection to Further Evaluate Performance and Operational Benefits to Optimize Fleet of Medium-Duty Plug-In Hybrid Vehicles

Contractor: Electric Power Research Institute	SCAQMD Cost-Share	\$ 250,000
	Cosponsor	
	Electric Power Research Institute	594,678
Term: 07/27/10 – 09/30/16	Total Cost:	\$ 844,678

In 2012 the SCAQMD, in partnership with the DOE, leveraged their previous investments in PHEV development to build a test fleet of PHEV vehicles. The vehicles took advantage of the non-recurring engineering work already invested in the development of Eaton's PHEV drive system. A contract was executed with EPRI to Develop and Demonstrate Fleet of Medium Duty Plug-In Hybrid Electric Vehicles. The vehicles have been delivered to customers and the DOE project ended in June, 2015. Due to delays and additional costs in obtaining CARB and US EPA certification for the vehicles there has not been enough time or funds available to collect, analyze and report on data generated by the vehicles. EPRI has estimated costs to complete the data analysis and reporting requirement of the project to be \$844,678 and is requesting SCAQMD to cost share \$250,000. The project will collect, analyze and disseminate data from the vehicles for one year.

13433: Develop and De	emonstrate Two Class	8 Zero-Emission	Electric Trucks
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Contractor: US Hybrid Corporation	SCAQMD Cost-Share	\$ 75,000
	Cosponsor	
	San Pedro Bay Port's Technology Advancement Program	75,000
Term: 06/26/13 – 09/30/17	Total Cost:	\$ 150,000

In October 2012, US Hybrid was awarded \$943,810, as part of the ZECT I grant, to develop two battery electric drayage trucks. US Hybrid initially planned to use off-board chargers to support these trucks during demonstration. However, based on input from fleet operators and available EV charging infrastructure at the demonstrator sites, US Hybrid has opted to integrate their electric trucks with an on-board charger to offer simpler charging logistics as well as cost savings for fleet operators. This contract modification is for US Hybrid to develop and integrate a 60 kW on-board charger into each of the two ZECT I demonstration trucks.

8 2		
Contractor: Altec Capital Services, LLC	SCAQMD Cost-Share	\$ 61,302
Term: $01/02/15 - 01/11/20$	Total Cost:	\$ 61,302

14052: Lease of Two Plug-In Hybrid Electric Vehicles

The Plug-In Hybrid Medium-Duty Truck Demonstration and Evaluation Program was sponsored by the DOE using American Recovery and Reinvestment Act of 2009 funding as well as the SCAQMD. The purpose of the program was to develop a path to migrate plug-in hybrid vehicle technology to medium-duty vehicles by demonstrating and evaluating vehicles in diverse applications. Two of these VIA trucks are being demonstrated at SCAQMD for this project. The VIA design is a series PHEV system. The electric motor provides all the propulsion power directly to the wheels. The gasoline engine provides torque to a generator that provides power to the battery pack and traction motor. The vehicles have up to 47 miles of all-electric range before the engine turns on and provides load-follower torque to the driveshaft while running in chargesustaining mode. The general assembly process is that VIA purchases completed 2014 trucks from Chevrolet, eliminates the transmissions, and replaces them with generators. A motor and gearbox are attached to the prop-shaft for traction torque, and two inverters are used to control the generator and the motor.

14336 & 15665: Install & Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project)

Contractor: Los Angeles Department of Water and Power; City of Santa Monica	SCAQMD Cost-Share	\$ 0
	Cosponsors	
	CEC	840,750
	SoCalEV Collaborative	542,659
Term: 07/31/15 – 04/30/16	Total Cost:	\$ 1,383,409

State, federal and local funds are currently being invested to support battery and plug-in electric vehicles (EVs) and associated charging infrastructure. There was a need to upgrade and expand electric vehicle infrastructure. In 2013, the LADWP asked the SCAQMD to administer the project, which was previously awarded \$840,750 by CEC. In 2013, the SCAQMD executed the first five agreements – Memorandum of Agreement (MOA) – with members of the SoCalEV Regional Collaborative to install as well as upgrade existing public EV charging infrastructure at key Southern California locations. In 2014, the SCAQMD executed 12 more agreements, and in 2015 another two agreements. SoCalEV Regional Collaborative members are providing cost-share towards hardware and installation expenses through in-kind labor and/or subcontractors. Data will be collected on charger utilization, charging user patterns, operating costs, electricity used and real-world electric range. By April 2016, 319 Level 2 chargers are expected to be installed at workplaces, destinations, universities, and other key locations.

15382: Install Electric Charging Infrastructure

Contractor: ChargePoint, Inc.	SCAQMD Cost-Share	\$ 162,000
Term: 01/23/15 – 01/22/17	Total Cost:	\$ 162,000

In order to accelerate the adoption of electric vehicles, SCAQMD executed contracts with the two major manufacturers of Level 2 chargers— ECOtality and ChargePoint, Inc. The intent of these contracts was to install additional public charging infrastructure by incentivizing the cost of hardware and/or installation by providing an incentive of \$1,000/charger installed. ECOtality completed installing the majority of its Level 2 charging stations in 2012. The remaining funds in the ECOtality contract were transferred to ChargePoint. ChargePoint has installed approximately 80 Level 2 chargers and is scheduled to complete their work by the end of 2016.

Contractor: University of California Los Angeles Luskin Center	SCAQMD Cost-Share	\$ 10,000
Term: 04/21/15 – 04/30/16	Total Cost:	\$ 10,000

15448:	Site Selection	for the E	Basin DC	Fast Charging	Network
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The UCLA Luskin Center was part of a CEC proposal team to provide site selection services for DC fast charging sites as part of the Basin DC Fast Charging Network. Although 26 sites were originally proposed to CEC, several sites dropped out of the project. As part of site substitution process, the UCLA Luskin Center ran their site selection model to determine the best sites to fulfill multiple criteria including proximity to major freeways or roads, proximity to retail locations, sites with comparable dwell times, and sites which would be predicted to have high charger utilization rates.

15650: Develop and Demonstrate Solar Forecasting for Larger Solar Arrays with Storage and EV Charging

Contractor: University of California San Diego	SCAQMD Cost-Share	\$	98,908
	Cosponsors		
	U.S. EPA		400,000
	CEC		999,984
	California Public Utilities Commission		156,386
Term: 07/17/15 – 01/16/18	Total Cost:	\$ 1	1,655,278

Inherent variability of solar output can impair power quality and grid reliability with wide voltage swings and feeder net load variability in the presence of partial cloud cover that must be matched with fossil generation resources. Plug-in electric vehicles (PEVs) along with other storage technologies can buffer the inherent variability of wind and solar renewable energy sources in the electric system with imaging systems that prepare systems for partial cloud cover. Using sky imaging systems with solar generation can help reduce the amount of storage needed to support variability from solar generation and allow solar generation provide less intermittency on the electrical grid with decreasing reliance on flexible fossil generation resources. Under this project UC San Diego has deployed high accuracy, short-term solar forecasting technologies to allow commercial and industrial ratepayers to maximize their available rooftop space for PV installations, reviewed the potential installation area available on warehouse spaces in the Basin with nearby grid feeder circuits, and reviewed use cases that co-optimize building electrical demand loads with flexible workplace PEV charging and energy storage. A demonstration of the solar forecasting system coupled with solar generation, electrical loads, and charging is being developed.

15680:	ComZEV: Develop Detailed Technology and Economics-Based Assessment
	for Heavy-Duty Advanced Technology Development

Contractor: National Renewable	SCAQMD Cost-Share	\$ 500,000
Energy Laboratory	(partially received as pass-through	
	funds)	
Term: 08/28/15 – 08/27/16	Total Cost:	\$ 500,000

The objective of the Commercial Zero-Emission Vehicle (ComZEV) project is to facilitate the reduction of NOx and GHG emissions through 2050 through the development of a plan for the commercialization of advanced vehicle technologies in the SCAQMD jurisdictional area. Specifically, a detailed technology and economics based roadmap will be developed, focusing on identifying barriers and opportunities to match advanced technology options to key commercial medium- and heavy-duty vehicle vocations. The technology options to be evaluated include battery electric vehicles, fuel cell vehicles, catenary/induction electric propulsion systems, and compressed natural gas and liquid natural gas internal combustion engines and gas turbines. The \$500,000 funding includes \$250,000 from the Southern California Gas Company recognized into the Clean Fuels Fund.

16022: ZECT II: Develop and Demonstrate One Class 8 CNG Hybrid Electric Drayage Truck

Contractor: Gas Technology Institute	SCAQMD Cost-Share	\$ 1,578,802
	Cosponsors	
	U.S. DOE (received as pass-through funds into	2,813,637
	Fund 61)	
	Gas Technology Institute	311,438
	Other Partners	923,442
Term: 12/04/15 – 06/30/20	Total Cost:	\$ 5,627,319

This project is one of the DOE-funded Zero Emission Cargo Transport II demonstration projects to promote and accelerate deployment of zero emission capable cargo transport technologies in the South Coast Air Basin. Under project management by Gas Technology Institute, BAE Systems will work with Kenworth to develop a CNG hybrid electric drayage truck with optional catenary capability for demonstration in real world drayage operations at the Ports of Los Angeles and Long Beach. The proposed technical concept provides a system with a well-balanced blend of all electric and CNG-based hybrid operation that can operate in zero emission (all-electric) mode in sensitive zones, such as disadvantaged communities around the Ports and along major goods movement corridors, and in a conventional hybrid electric mode using a CNG generator to provide an operating range of up to 250 miles and power output comparable to that of conventional Class 8 drayage trucks.

Contractor: Transportation Power, Inc.	SCAQMD Cost-Share	\$ 195,326
	Cosponsors	
	U.S. DOE (received as pass-through funds into Fund 61)	958,120
	CEC	900,000
	Transportation Power, Inc.	50,000
Term: 12/04/15 – 09/30/17	Total Cost:	\$ 2,103,446

16046: ZECT: Develop and Demonstrate Two Class 8 CNG Plug-In Hybrid Electric Drayage Trucks

This project is for one of the two technologies that were added to the first Zero Emission Cargo Transport (ZECT I) project in 2015. Transportation Power (TransPower) will develop two Class 8 CNG plug-in hybrid electric drayage trucks with zero emission operation capability for demonstration in revenue drayage service with fleet operators at the Ports of Los Angeles and Long Beach. Using a CNG generator in a series hybrid drive configuration, these hybrid trucks will be designed to provide comparable power and torque to those of conventional drayage trucks with a targeted range of 200 miles, including 30-40 all-electric miles. The hybrid technology to be used in this project leverages the advanced electric drive system TransPower has developed for their battery electric trucks, which are currently in demonstration with fleet partners in the South Coast Air Basin. TransPower will also utilize commercially available and widely used CNG engines and components to make the hybrid drive technology more cost-competitive and well-positioned for commercialization.

16047: ZECT: Develop and Demonstrate Three Class 8 LNG Plug-In Hybrid Electric Drayage Trucks

Contractor: US Hybrid Corporation	SCAQMD Cost-Share	\$ 22,896
	Cosponsors	
	U.S. DOE (received as pass-through funds into Fund 61)	925,000
	CEC	450,000
	TTSI	630,000
	US Hybrid Corporation	90,000
Term: 11/06/15 – 09/30/17	Total Cost:	\$ 1,996,675

This project is for the other zero emission truck technology that was added to the ZECT I demonstration project in 2015. US Hybrid will convert three Class 8 liquefied natural gas (LNG) drayage trucks into plug-in hybrid electric trucks with zero emission operation capability for demonstration with fleet operators at the Ports of Los Angeles and Long Beach. US Hybrid will leverage a parallel hybrid electric drive system they have developed for refuse trucks to design a hybrid electric drive system well-suited for port drayage truck operations with comparable or higher power output to that of conventional trucks and a targeted range of 200 miles, including 30-40 all-electric miles.

Contractor: Varies	SCAQMD Cost-Share	\$ 500,000
	Cosponsor	
	MSRC/AB 2766 Discretionary Fund Program	500,000
Term: 09/04/15 – 09/04/15	Total Cost:	\$ 1,000,000

Direct Pave	Establish Residential EV Charging Incentive Pilot Program
Direct ray:	Establish Residential EV Charging incentive rhot rrogram

SCAQMD launched a Residential EV Charging Incentive Pilot Program in December 2015 utilizing \$500,000 from the Clean Fuels Fund and \$500,000 in MSRC funding. Rebates of \$250 or \$500 (low income residents) are being offered to buy down the cost of hardware for residential Level 2 chargers. Costs for Level 2 chargers range from \$400 - \$800 per charger. Applicants will fill out a one-page online application and provide proof of charger purchase, lease or purchase of a new or used electric vehicle, utility bill, permit or certification of self-installation with an existing 240V outlet, and photo of the installed charger. Chargers will need to be permanently installed and in place for a minimum of three years. Tenants in multi-family dwellings or condominiums can install chargers with the permission of the property owner, manager or HOA.

Direct Pay: EV Charger Installation

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share	\$ 5,196
Term: 03/18/15 – 03/18/15	Total Cost:	\$ 5,196

This project provides funds for the demonstration of Level 2 electric vehicle chargers from several manufacturers including ChargePoint, Clipper Creek, LiteOn, AeroVironment, and BTC Power, Inc. Clean Fuel Connection, Inc. purchased and installed Level 2 chargers at various locations. These chargers have been utilized extensively by SCAQMD Board members, staff, and the general public.

Direct Pay: EV Charger Installation

Contractor: ATVLS, Inc.	SCAQMD Cost-Share	\$ 21,155
Term: 07/01/15 – 07/01/15	Total Cost:	\$ 21,155

This project provides funds for the demonstration of Level 2 chargers from several manufacturers including ChargePoint, Clipper Creek, LiteOn, AeroVironment, and BTC Power, Inc. ATVLS, Inc. purchased and installed two Level 2 chargers at the City of Wildomar City Hall to provide public charging in an underserved location in the Inland Empire. Additional public charging infrastructure in more remote locations assisted in extending charging corridors throughout the region.

Hydrogen and Mobile Fuel Cell Technologies and Infrastructure

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Contractor: Air Products and Chemicals, Inc.		SC	CAQMD	Cost-Share	\$ 75,000
	Cosponsor				
				CARB	200,000
Term: 12/21/09 – 11/01/15				Total Cost:	\$ 275,000

10046: Develop and Demonstrate Renewable Hydrogen Energy and Fueling Station

Air Products and Chemicals, Inc. was selected by CARB under a solicitation to install a new 350/700 bar hydrogen refueling station at Orange County Sanitation District which was supplied by 100% renewable hydrogen and 100% renewable electricity produced utilizing a molten carbonate fuel cell. The SCAQMD joined the project cofunding the fuel cell and station operation. The hydrogen produced was purified using a hydrogen purification system. The molten carbonate fuel cell system and purification system installed at the water treatment facility under a DOE Cooperative Agreement. The hydrogen fueling station was operated by the National Fuel Cell Research Center and the University of California, Irvine and was co-located with an existing, publicly accessible compressed natural gas fueling station. The hydrogen station was designed to dispense 100 kg/day of hydrogen and achieved a single 4.5 kg fill in 3 minutes from the 700 bar dispenser, achieved 3 consecutive 5 kg fills from the 350 bar dispenser in 25 minutes.

13155: Lease Two F-Cell Mercedes Benz Fuel Cell Vehicles for Two Years

Contractor: Fletcher Jones Motor Cars Inc.	SCAQMD Cost-Share	\$ 14,598
Term: 02/08/13 – 02/08/17	Total Cost:	\$ 14,598

The SCAQMD extended the lease for two Mercedes F-Cell fuel cell vehicles from Fletcher Jones MotorCars which is conveniently located near the UC Irvine hydrogen fueling station. SCAQMD previously demonstrated Mercedes A-class (smaller) F-Cell vehicles from 2005 to 2009. Mercedes produced about 200 F-Cells as part of this pilot program in the US and Europe. This B-Class F-Cell provides 136 hp and a top speed of 106 mph. Range is improved to about 200 miles compared to the previous A-Class version when refueling at a higher pressure of 700 bar. The vehicles are used in our alternative fuel vehicle fleet to demonstrate new clean fuel vehicles to public and private organizations to promote zero- and low-emission technologies. The lease extension is at a reduced rate compared to the original contract amount of \$30,397 for 2 years.

13400: Develop Hydrogen Station Investment Plan and Assess Policies and Incentives for Implementation

Contractor: Energy Independence Now	SCAQMD Cost-Share	\$ 80,000
	Cosponsors	
	CaFCP (received as pass-through funds from CEC into Fund 55 in 2014)	20,000
	Toyota	25,000
Term: 04/05/13 – 12/31/15	Total Cost:	\$ 125,000

Energy Independence Now (EIN), in partnership with SCAQMD, embarked on a project to develop a Hydrogen Network Investment Plan (H2NIP) in order to examine market success factors relative to the launch of fuel cell vehicles (FCV) and infrastructure. The project was broken into two phases. Phase I was completed in 2013. Phase II, funded through a contract amendment executed in 2015, developed an assessment of fuel incentives and renewable hydrogen in California that included findings on hydrogen-related environmental credits, key actions needed to further develop California's Low Carbon Fuel Standard (LCFS) and U.S. EPA's Renewable Fuel Standard (RFS) incentives, and highlighted concerns and drivers for the renewable hydrogen market. The final version of the plan, 'Crediting Hydrogen: Fuel Incentives and Renewable Hydrogen Investment in California' was completed in November 2014. EIN provided hydrogen stakeholders with appropriate information to capture a full range of monetary benefits that are currently available through the LCFS program, an assessment of the current and future impacts of the renewable hydrogen investments.

14684: Conduct Hydrogen Station Site Evaluations for Site Certification for Commercial Sale of Hydrogen

Contractor: California Department of Food and Agriculture, Division of Measurement Standards		SCAQMD Cost-Share	\$ 100,000
	Cosponsor		
		CaFCP	150,000
		CARB	100,000
		CEC	100,000
Term: 12/11/15 – 12/31/16		Total Cost:	\$ 450,000

The California Department of Food and Agriculture, Division of Measurement Standards has requested cofunding to conduct site evaluations at ten hydrogen fueling stations leading to certification of the station for the commercial sale of hydrogen. Hydrogen dispensers certified under this program can then be used at multiple locations in California with a simple one day test similar to gasoline station annual evaluation.

15596: Transfer of Ownership of One Gaseous Hydrogen Electrolyzer, Compressor, Storage Tanks and Associated Hydrogen Equipment

Contractor: US Hybrid Corporation	SCAQMD Cost-Share	\$ 0
Term: 04/15/15 – 12/31/15	Total Cost:	\$ 0

The transfer of hydrogen equipment from the Five Cities Burbank hydrogen station to US Hybrid did not take place since there was an alternate use for the storage tanks as part of the SCAQMD CNG station upgrade.

Contractor: City of Burbank	SCAQMD Cost-Share	\$ 0
Term: 03/19/15 – 03/19/15	Total Cost:	\$ 0

The City of Burbank formally transferred ownership of the Five Cities Burbank hydrogen station equipment to SCAQMD in order to facilitate the transfer of various pieces of hydrogen equipment to US Hybrid. However, it was subsequently determined to use the storage tanks for the SCAQMD CNG station upgrade.

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Contractor: ITM Power, Inc.		SCAQMD Cost-Share	\$ 200,000
	Cosponsors		
		CEC	2,125,000
		ITM Power, Inc.	217,125
		Powertech Labs	232,059
		City of Riverside	160,000
Term: 10/06/15 – 10/05/19		Total Cost:	\$ 2,934,184

15609: Installation of Riverside Renewable Hydrogen Fueling Station

ITM Power, Inc (ITM) is installing a retail hydrogen station at the City of Riverside fleet yard. This hydrogen station will be co-located with a CNG station and a DC fast charging station for CNG and electric vehicles. The Riverside station will be a renewable station that will fulfill Renewable Portfolio Standard (RPS) requirement for CEC-funded stations, with 33% of the hydrogen being produced locally with an electrolyzer supplied with 100% renewable electricity. The remaining 66% of the hydrogen will be delivered. The station will have a nominal capacity of 100 kg/day, with 35 kg/hour in Type A for 70Mpa fills. The Riverside station can be easily expanded and if needed, could become a 100% renewable station at an additional cost. New 350 bar and 700 bar point of sale (POS) dispensers are being upgraded to allow for the sale of hydrogen as retail transactions using credit cards. The station will meet SAE J2601:2014 and J2719:2011 standards for hydrogen fueling protocol and hydrogen quality. The station is scheduled to be completed in 2016.

Contractor: Ontario CNG Station, Inc.	SCAQMD Cost-Share	\$ 200,000
	Cosponsors	
	CEC	2,125,000
	Ontario CNG Station, Inc.	351,000
	Stratos Fuel LLC	34,000
Term: 07/10/15 – 07/09/20	Total Cost:	\$ 2,710,000

15611: Installation of Ontario Renewable Hydrogen Fueling Station

Ontario CNG Station, Inc. is installing a retail hydrogen station at a gas station in the City of Ontario, next to the Ontario airport. The hydrogen station is co-located with a CNG station and E85 fueling station, and will also host a DC fast charging station later in 2016. The onsite electrolyzer will produce 65 kg/day, with the remaining 35 kg/day provided through 100% renewable delivered hydrogen in order to meet the RPS requirement for CEC-funded stations. The station will have a nominal capacity of 100 kg/day, with 35 kg/hour I Type A for 70Mpa fills. Capacity at this station could be easily increased if needed, could become a 100% renewable station through the use of renewable energy certificates (REC) for electricity and purchase of additional 100% renewable hydrogen. New 350 bar and 700 bar POS dispensers are being

upgraded to allow for the sale of hydrogen as retail transactions using credit cards. The station will meet SAE J2601:2014 and J2719:2011 standards for hydrogen fueling protocol and hydrogen quality. The station is scheduled to be completed in 2016, and is waiting for a major transformer upgrade by Southern California Edison at this site to accommodate demand by the upgraded hydrogen and CNG stations, and the future DC fast charger.

Contractor: H2 Frontier Inc.		SCAQMD Cost-Share	\$ 200,000
	Cosponsors		
		CEC	3,000,000
		H2 Frontier Inc.	266,925
		Powertech Labs	500,027
		ITM Power, Inc.	700,027
Term: 12/04/15 – 12/03/20		Total Cost:	\$ 4,666,979

15619: Installation of Chino Renewable Hydrogen Station

H2 Frontier Inc. is installing a 100% renewable hydrogen station at the Hyundai Hydrogen Generating Facility in the City of Chino. The Hyundai Chino station will be one of the few 100% renewable stations in the South Coast Air Basin, and will fulfill Renewable Portfolio Standard (RPS) requirement for CEC-funded stations. Electricity will be 100% renewable through the use of RECs and will be locally generated with an on-site electrolyzer. Delivered 100% renewable hydrogen may be used when the electrolyzer is out of service. The station will have a nominal capacity of 100 kg/day, with 35 kg/hour in Type A for 70Mpa fills. The Chino station can be easily expanded. Its close proximity to the Hyundai off-road testing facility will be used for chassis dynamometer testing and increased durability testing routes adjacent to the station. New 350 bar and 700 bar point of sale (POS) dispensers are being upgraded to allow for the sale of hydrogen as retail transactions using credit cards. The station will meet SAE J2601:2014 and J2719:2011 standards for hydrogen fueling protocol and hydrogen quality. The station is scheduled to be completed in the 2016-2017 timeframe.

15641: Three-Year Lease of 2015 Tucson Fuel Cell Vehicle

Contractor: Hardin Hyundai	SCAQMD Cost-Share	\$ 22,862
Term: 06/15/15 – 06/14/18	Total Cost:	\$ 22,862

SCAQMD has been working with Hyundai America Technical Center Inc. to become a partner in their fuel cell vehicle demonstration program and has participated in on-road testing of their Tucson fuel cell electric vehicle in a program funded by a grant from the U.S. DOE. Hyundai started limited production of the 2015 Tucson fuel cell vehicle for retail lease only through three specially trained dealerships in our region; Hardin Hyundai is the closest dealership which minimizes emissions for service visits. The Hyundai Tucson fuel cell vehicle is a five-passenger SUV that travels 265 miles before refueling with 70 MPa gaseous hydrogen and has EPA estimated fuel economy of 50 mpg. The vehicle is part of SCAQMD's alternative fuel vehicle fleet to demonstrate new clean fuel vehicles to public and private organizations to promote low-emission technologies.

15666: Participate in CaFCP for CY 2015 and Provide Support for Regional Coordinator

Contractor: Bevilacqua-Knight, Inc.	SCAQMD Cost-Share	\$ 137,800
	Cosponsors	
	7 automakers; 5 government agencies; 1 fuel cell provider, and 9 associate and 14 affiliate members	1,943,008
Term: 01/01/15 - 12/31/15	Total Cost:	\$ 2,080,808

In April 1999, the California Fuel Cell Partnership (CaFCP) was formed with eight members; SCAQMD joined and has participated since 2000. The CaFCP and its members are demonstrating and deploying fuel cell passenger cars and transit buses with associated hydrogen fueling infrastructure in California. Since the CaFCP is a voluntary collaboration, each participant contracts with Bevilacqua-Knight, Inc. (BKi) for their portion of the CaFCP's administration. In 2015, the SCAQMD Board contributed \$87,800 for membership and up to \$50,000, along with four cubicles at SCAQMD Headquarters, to provide support for the CaFCP Regional Coordinator.

16039:	Demonstrate	Prototype	Hvdrogen	Sensor and	Electronics Package

Contractor: Lawrence Livermore National Laboratory		SCAQMD Cost-Share	\$ 175,000
	Cosponsor		
		U.S. DOE	175,000
Term: 12/10/15 – 02/09/17		Total Cost:	\$ 350,000

Lawrence Livermore National Laboratory (LLNL), in conjunction with Los Alamos National Laboratory, has developed a novel, miniature, solid-state electrochemical sensor with the potential to meet requirements for sensitivity, durability, reliability and operational (environment) requirements at a low enough cost for wide-scale deployment. Cofunding from SCAQMD will enable additional testing by LLNL at a hydrogen station within our region.

16151: No-Cost Loan of 2015 Toyota Mirai Fuel Cell Vehicle

Contractor: Toyota Motor Sales USA	SCAQMD Cost-Share	\$ 0
Term: 12/15/15 – 01/05/16	Total Cost:	\$ 0

One Toyota Mirai fuel cell vehicle was loaned to SCAQMD for a short term for no cost to accommodate elevated interest in this new vehicle.

16171: Three-Year Lease of 2015 Toyota Mirai Fuel Cell Vehicle

Contractor: Longo Toyota	SCAQMD Cost-Share	\$ 24,567
Term: 12/15/15 – 12/14/18	Total Cost:	\$ 24,567

SCAQMD has worked with Toyota to demonstrate their previous Highlander fuel cell demonstration vehicle through a program with UC Irvine. Toyota started production of the 2016

Mirai fuel cell 4-passenger sedan. The vehicle is available for retail lease through four specially trained dealerships in our region; Longo Toyota is the closest dealership which minimizes emissions for service visits. The Mirai fuel cell vehicle travels 312 miles before refueling with 70 MPa gaseous hydrogen and has EPA estimated fuel economy of 67 mpg. The vehicle will be placed into our alternative fuel vehicle fleet to demonstrate new clean fuel vehicles to public and private organizations to promote low-emission technologies.

Direct Pay: Repair Hydrogen Quality Sampling Adaptor

Contractor: Gas Technology Institute	SCAQMD Cost-Share	\$ 2,410
Term: 08/11/15 – 08/11/15	Total Cost:	\$ 2,410

NREL loaned the hydrogen quality sampling adapter to SCAQMD to conduct sampling at hydrogen stations in our region to support the development of new test methods under contract 15020 with UC Irvine. Service available only through Gas Technology Institute was needed before the equipment could be returned to NREL.

Direct Pay: Purchase One 2016 Toyota Mirai Fuel Cell Vehicle

Contractor: Toyota Motor Sales USA	SCAQMD Cost-Share	\$ 56,688
Term: 12/01/15 – 12/01/15	Total Cost:	\$ 56,688

SCAQMD has worked with Toyota to demonstrate their previous Highlander fuel cell demonstration vehicle through a program with UC Irvine. Toyota started production of the 2016 Mirai fuel cell 4-passenger sedan. The vehicle is available for retail purchase or lease through four specially trained dealerships in our region; Longo Toyota is the closest dealership which minimizes emissions for service visits. The Mirai fuel cell vehicle travels 312 miles before refueling with 70 MPa gaseous hydrogen and has EPA estimated fuel economy of 67 mpg. One Mirai was purchased since it is the first fuel cell vehicle available for purchase in California, and since there is an additional \$15,000 incentive available for purchase (not lease) of fuel cell vehicles by public fleets serving disadvantaged communities. The vehicle will be placed into our alternative fuel vehicle fleet to demonstrate new clean fuel vehicles to public and private organizations to promote low-emission technologies.

Engine Systems

15626: Develop, Integrate and Demonstrate Ultra Low-Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles

Contractor: Cummins Westport, Inc.	SCAQMD Cost-Share	\$ 3,500,000
	(partially received as pass-through funds)	
	Cosponsor	
	Cummins Westport, Inc.	3,733,000
Term: 07/10/15 – 12/31/16	Total Cost:	\$ 7,233,000

Heavy-duty on-road diesel vehicles are projected to be the top source of NOx emissions in the South Coast Air Basin (SCAB) in 2023 contributing approximately 50 tons per day of NOx. The early development of ultra-low emission engines that emit 90% lower NOx emissions than

current emission standards, would significantly reduce emissions from this on-road source category and assist the region in meeting federal ambient air quality standards in 2023 and later years. Natural gas fueled engines have demonstrated the ability to meet these low emissions standards now while diesel engines have not. This project will apply technology developed for 8.9-liter natural gas engines to 12-liter natural gas engines that are (1) suitable for on-road heavy-heavy duty vehicle applications such as Class 8 trucks and buses; (2) commercially viable; (3) capable of being certified to the CARB Optional NOx standard of 0.02 g/bhp-hr, and 4) capable of NH3 emissions and fuel economy penalties compared to diesel engines as low as possible. The project includes engine and after-treatment system development, integration into vehicles, and field demonstration leading to commercialization in production vehicles by 2018.

15632:	Develop	Ultra	Low-Emission	Natural	Gas	Engine	for	On-Road	Medium-
	Duty Ve	hicles							

Contractor: Gas Technology Institute	SCAQMD Cost-Share	\$ 750,000
	Cosponsors	
	Ricardo	50,000
	PSI	750,000
	Southern California Gas Company	250,000
Term: 09/01/15 – 06/30/17	Total Cost:	\$ 1,800,000

Heavy-duty on-road diesel vehicles are projected to be the top source of NOx emissions in the South Coast Air Basin (SCAB) in 2023 contributing approximately 50 tons per day of NOx. Light-heavy and medium-heavy heavy duty diesel on-road buses and trucks are projected to contribute approximately 18 of the 50 tons per day of NOx in the heavy duty diesel category. The development of ultra-low emission engines that emit 90% lower NOx than current standards for these smaller vehicles would significantly reduce their emissions and assist the region in meeting federal ambient air quality standards in the coming years. Natural gas fueled engines have demonstrated the ability to meet these low emissions standards while diesel engines have not. The objective of this project is to develop an 8.8-liter natural gas engine and associated exhaust after-treatment technology that is (1) suitable for on-road light- and medium-heavy duty vehicle applications such as Class 4-6 trucks and buses; (2) commercially viable; (3) capable of being certified to the CARB Optional NOx standard of 0.02 g/bhp-hr, and (4) NH3 emissions and fuel economy penalties as low as possible. The project does not include vehicle integration and demonstration activities.

Fueling Infrastructure & Deployment (NG/RNG)

16076: Deployment of One Heavy-Duty Natural Gas-Powered Paratransit Vehicle

Contractor: Coachella Valley Association of Governments	SCAQMD Cost-Share	\$ 140,000
Term: 12/11/15 – 12/11/19	Total Cost:	\$ 140,000

In July 2015, the Board approved funding of \$140,000 to support the purchase and deployment of one heavy-duty CNG-powered paratransit vehicle for the purpose of providing alternative fuel powered ground transportation in the Coachella Valley region. The vehicle will be deployed for a minimum of three years through the Coachella Valley Association of Governments' (CVAG) Administration Department with the purpose of providing shuttle services to the homeless. The

intended operator of this vehicle is CVAG's approved operator of Roy's Desert Resource Center (DRC) located in North Palm Springs, CA. The vehicle to be deployed is a 32-foot Class E bus with wheelchair lift and two ADA positions and will be built by Creative Bus Sales. The vehicle will be built on a Ford F550 chassis, powered by a 6.8L Ford V-10 gasoline engine that will be converted to dedicated CNG using a CARB-certified system. The vehicle will be equipped with 54 GGE of fuel storage. The project is expected to provide support of CNG vehicle deployment and demonstrate emission reductions in this region.

Fuels/Emissions Studies

15607: Innovative Transportation System Solutions for NOx Reductions in Heavy-Duty Fleets

Contractor: University of California Riverside/CE-CERT	SCAQMD Cost-Share	\$ 79,980
	Cosponsor	
	University of California Riverside/CE-CERT	60,000
Term: 12/19/15 – 11/30/16	Total Cost:	\$ 139,980

The objective of this project is to develop a new intelligent routing system for heavy-duty trucks, specifically designed to minimize NOx emissions and fuel consumption. This routing system will be built upon CE-CERT's previous research in eco-routing algorithms for light-duty vehicles by incorporating heavy-duty truck energy and emissions data using appropriate models. This application will provide drivers eco-friendly routes with optimal speed to travel based on traffic and road conditions. CE-CERT will field test the application to validate its accuracy and effectiveness including comparison analysis of the estimated NOx emissions with real world NOx emission measurements.

Contractor: University of California Riverside/CE-CERT	SCAQMD Cost-Share	\$ 75,000
	Cosponsor	
	University of California Riverside/CE- CERT via CARB 13-302	405,338
Term: 10/02/15 – 06/30/16	Total Cost:	\$ 480,338

Low Vapor Pressure (LVP) compounds are often unaccounted for in air models and emission inventories because of their low volatility. However, recent studies indicate that some LVP components of gasoline and diesel are also reactive and may play a significant role in the formation of ozone and PM2.5 including secondary organic aerosol (SOA). Recent observations from the CalNex study observe that the SOA fraction is most strongly correlated with evaporative and tailpipe gasoline vehicle emissions. While SOA formation from some gasoline components have been individually studied under controlled conditions, studies of the atmospheric fate of lower-volatility compounds in gasoline and diesel are somewhat limited. Given changes in fuel formulations, increased knowledge on the impact of reactivity on SOA formation, potential evaporative and tailpipe losses to the atmosphere, and improved experimental photochemical chambers and instrumentation, a new study of whole gasoline and diesel vapor aerosol formation would provide beneficial insight. Building on the CARB-funded research program for the study of LVP compounds, UCR CE-CERT will evaluate the evaporation characteristics as well as quantify ozone and SOA formation potential from the LVP compounds in gasoline and diesel. This pilot study is a fuel-related expansion of the on-going research with CARB. Whole gasoline and diesel mixtures will be oxidized inside a state-of-the-art large Teflon chamber, leading to the formation of SOA. Measurements of SOA production will be used to evaluate the performance of SOA formation estimation tools. This will lead to more accurate predictions of SOA formation from specific LVP precursors. In addition, UCR CE-CERT will investigate the chemical composition of SOA from gasoline and diesel vapors using mass spectrometry.

Contractor: University of California Riverside/CE-CERT	SCAQMD Cost-Share	\$ 149,972
	Cosponsor	
	University of California Riverside/CE-CERT	75,000
Term: 10/02/15 – 06/30/17	Total Cost:	\$ 224,972

Gasoline direct injection (GDI) vehicles are known for higher fuel efficiency and power output but the PM emissions profile is not well understood, especially on SOA formation potential. As manufacturers introduce more GDI models in the market to meet new fuel economy standards, it is important to understand the SOA potential from these vehicles as it could lead to further impact on the ambient PM concentration in our region. This project proposes to investigate the physical and chemical composition of aerosols from GDI vehicles using a mobile environmental chamber that has been designed and constructed to characterize secondary emissions. This study covers testing of four (4) GDI vehicles over Unified Cycle using in tank fuel, and another four (4) vehicles using three types of fuels with different ethanol blending (E10 and E20 for three conventional GDIs, and E10 and E85 for one GDI-FFV. The results of this study will provide valuable information on primary and secondary particulate emissions including SOA from in-use GDI vehicles and help to facilitate a discussion on potential mitigation strategies.

15636:	Evaluate PEV	Utilization through	Advanced	Charging Strategies in a Smart
	Grid System			

Contractor: University of California Riverside/CE-CERT	SCAQMD Cost-Share	\$ 170,000
	Cosponsor	
	University of California Riverside/CE-CERT	100,000
Term: 12/15/15 – 02/14/17	Total Cost:	\$ 270,000

As part of SCAQMD's efforts in deploying in-basin renewable distributed electricity generation with energy storage to support electric transportation technologies, UCR CE-CERT was awarded a contract to initiate the "Sustainable Integrated Grid Initiative" project in late 2012. This project has been deployed and is now in operation at the UCR campus. This project serves as a research test bed and demonstration site for Plug-In Vehicles (PEVs) that can be directly integrated with smart grid technology. UCR/CE-CERT continues to expand their programs focused on transportation emissions, their measurement and mitigation. Based on the relevance and potential

to address SCAQMD's priorities to reduce NOx and PM emissions from transportation sources this contract was awarded to UCR/CE-CERT for the evaluation and demonstration of advanced charging technologies and associated vehicle activity to further demonstrate the effectiveness of PEV deployment as part of a smart grid system. PEV utilization will be greatly increased by incorporating advanced charging strategies and/or technologies such as V2G. With Riverside Public Utilities as a cofunding partner this project will incorporate and evaluate Vehicle-to-Grid Strategies; PEV Activity Analysis and Charge; Light Duty Vehicle DC Fast Charging and Heavy Duty PEV Transit Vehicle DC Fast Charging.

Emission Control Technologies

15347: Develop Retrofit Technology for Natural Gas Engines and In-Use Emissions
Testing of On-Road Heavy-Duty Trucks

Contractor: West Virginia University Research Corporation	SCAQMD Cost-Share	\$ 340,0000
	Cosponsors	
	CARB	100,000
	West Virginia University Research Corporation	50,000
Term: 01/09/15 – 11/08/15	Total Cost:	\$ 490,000

In December 2010, the Board awarded a contract to West Virginia University (WVU) to conduct in-use emissions testing, and if needed, to evaluate emission-reduction potential of retrofit technology on existing and new on-road heavy-duty vehicles. While the test results revealed that test vehicles' in-use emissions were lower than the 2010 U.S. EPA in-use or not-to-exceed emissions standards, ammonia emissions from natural gas vehicles were found to be significantly higher than expected due to the nature of spark-ignited engines. The initial evaluations of technologies to reduce emissions from natural gas engines indicate that a selective catalytic reduction (SCR) system is capable of reducing ammonia and further reducing NOx emissions. However, additional work is required to develop, optimize, and enhance the SCR system's performance and durability. In October 2011, the Board amended the December 2010 award and added a new task to assess real-world in-use emissions from a 70,000-pound loaded 2010 U.S. EPA compliant heavy-duty diesel vehicle as the vehicle was driven over a 2,500-mile route between Morgantown WV and Riverside CA. The real-world in-use emissions assessment showed that the combined diesel particulate filter and SCR system achieved low levels of PM and NOx emissions for over 90% of the 2,500-mile trip characterized by mostly sustained freeway operation. The real-world in-use test results necessitate a need to enhance the assessment study to cover urban traffic conditions that are characteristic of heavy-duty vehicle operations in the South Coast Air Basin. In September 2013, the Board awarded a contract to WVU for \$340,000 to develop, optimize, and enhance the SCR system to reduce ammonia and NOx emissions from a heavy-duty natural gas engine and conduct real-world in-use emissions testing of heavy-duty vehicles, each loaded to approximately 70,000 pounds, while driven over typical dravage truck routes in the Basin.

Outreach & Technology Transfer

05128: Technical Assistance for Development, Outreach and Commercialization of Advanced Heavy-Duty and Off-Road Technology

Contractor: Mid-Atlantic Research Institute LLC	SCAQMD Cost-Share	\$ 30,000
Term: 08/08/15 – 03/31/17	Total Cost:	\$ 30,000

In August 2015, Mid-Atlantic Research Institute LLC was tasked under an existing level-of-effort contract to assist WVU (another SCAQMD contractor) to develop, optimize and enhance the SCR system's performance and durability, specifically for addressing ammonia emissions.

13194: Technical Assistance with Alternative Fuels, Renewable Energy and EVs, Program Related Activities for AFVs, Lawn Mower Exchange, Conferences and Outreach

Contractor: Clean Fuel Connection Inc.	SCAQMD Cost-Share	\$ 60,000
Term: 12/07/12 – 09/30/16	Total Cost:	\$ 60,000

SCAQMD relies on expert input, consultation and support to manage a number of programs conducted under the Clean Fuels Program and incentive programs. Clean Fuel Connection (CFC) is providing technical assistance with alternative fuels, renewable energy and electric vehicles to promote, assess, expedite, and deploy the development and demonstration of advanced, low- and zero-emissions mobile and stationary technologies. This modification to increase available funds under this existing Contract is for administrative support to enable the range of activities involved in implementing the Clean Fuels Program and associated complimentary programs as needed. Support is necessary to enhance or expand existing program-related activities associated with performing or meeting program objectives such as: alternative fuel vehicles (AFVs) demonstration program; lawn mower exchange program; technical conferences; and other outreach activities.

13198: Technical Assistance with Alternative Fuels, Emissions Analysis and On-Road Sources

Contractor: Gladstein, Neandross & Associates LLC	SCAQMD Cost-Share	\$ 60,000
Term: $12/14/12 - 12/31/16$	Total Cost:	\$ 60,000

This contract extension adds \$60,000 to continue to leverage staff resources with specialized outside expertise. Gladstein, Neandross & Associates LLC (GNA) has previously assisted SCAQMD with implementing a wide-array of incentive programs to deploy lower-emitting heavy-duty vehicles and advanced transportation technologies. Under this contract, GNA will provide technical expertise across a broad spectrum of emission reduction technologies, including alternative and renewable fuels, emissions analysis and heavy-duty on-road sources.

14185:	Conduct	Education	Outreach	for	the	Basin	DC	Fast	Charging	Network
	Project									

Contractor: Three Squares Inc.	SCAQMD Cost-Share	\$ 40,000
Term: $04/11/14 - 10/31/16$	Total Cost:	\$ 40,000

Three Squares Inc. was selected through an RFP process to conduct an education outreach campaign for customers of the Basin DC Fast Charging Network to educate customers on the differences between Level 1, Level 2 and DC fast charging; benefits of public charging to increase electric vehicle miles traveled; availability of public charging to supplement residential and/or workplace charging; environmental benefits associated with the use of plug-in electric vehicles and electrical vehicle infrastructure; and charging etiquette such as not parking in a space dedicated to electric vehicles when not charging or not staying over posted time limits. Three Squares Inc. has created a SoCalFast website to collect information on charging and make it easily accessible to mainstream consumers and is reaching out to coordinate with local governments, utilities, OEMs, advocacy groups, and event organizers to publicize installations of DC fast chargers as they are installed in the South Coast Air Basin. Three Squares Inc. will organize ribbon cuttings as each DC fast charger comes online, both separately and as part of an overall traditional and social media campaign.

15507: Technical Assistance with Alternative Fuels, Emissions Analysis and Combustion Technologies

Contractor: Jerald Cole	SCAQMD Cost-Share	\$ 30,000
	Cosponsor	
	CEC (received as pass-through funds into	50,000
	Fund 63 in 2013)	
Term: 01/09/15 – 01/08/17	Total Cost:	\$ 80,000

Jerald Cole of Hydrogen Ventures is conducting an evaluation of upgraded hydrogen equipment and meters for the hydrogen stations undergoing upgrades through CEC and SCAQMD cofunding efforts. This evaluation will discuss the relative effectiveness and merits of point-ofsale (POS) dispensers and software; ability of stations to meet SAE J2601:2014 and J2719:2011 standards for hydrogen fueling protocol and hydrogen quality; performance expectations for retail stations such as reliability/up time, back to back fills, and hydrogen purity; and meeting the needs of customers taking delivery of commercially available FCVs. This evaluation will assess all stations undergoing upgrades in the 2015-2018 timeframe.

15516: Technical Assistance with Construction of Zero Emissions Goods Movement Demonstration Program

Contractor: Cordoba Corporation	SCAQMD Cost-Share	\$ 74,500
Term: 03/27/15 – 03/31/18	Total Cost:	\$ 74,500

Cordoba Corporation has been enlisted to provide technical assistance and consulting services for the Overhead Catenary Truck Demonstration. Siemens, the principle contractor for that project is in need of assistance in the redesign of the infrastructure. Cordoba will provide construction consulting services and also review, assess and make recommendations on the overall construction portion of the project.

Contractor: Goss Engineering, Inc.	SCAQMD Cost-Share	\$ 50,000
Term: 06/02/15 – 06/01/16	Total Cost:	\$ 50,000

15610: Conduct Engineering Services at SCAQMD Headquarters

Goss Engineering, Inc. was selected through an informal bid process to provide engineering and construction planning services for the installation of up to 100 Level 2 chargers at SCAQMD headquarters. Technical assistance services included the development of load testing of electric panels, detailed construction plans to obtain a permit for the EV charger installation project with the City of Diamond Bar, evaluation of installation proposals, slope analysis for compliance with ADA accessibility guidelines, short circuit study, and revisions to the construction plans and permit process as required.

16055: Cosponsor Solar Decathlon – Develop and Demonstrate Solar-Powered House at 2015 U.S. DOE Solar Decathlon

Contractor: University of California Irvine	SCAQMD Cost-Share	\$ 50,000
	Cosponsors	
	Southern California Edison	150,000
	Five Points Properties	100,000
	The Irvine Company	230,000
	City of Irvine	200,000
Term: 11/05/15 – 02/29/16	Total Cost:	\$ 730,000

The biennial U.S. Department of Energy Solar Decathlon competition brings together university teams from across the country with homes they have designed and built that are powered by the sun. The homes must achieve other metrics such as, having low water usage, producing more energy than they consume, power an electric vehicle for specific duty cycles, and maintain comfortable living conditions. The 2015 competition held in October brought together seventeen teams at the Orange County (OC) Great Park with their houses to compete against each other under ten different contests. This co-sponsorship helped TeamOC design and build their competition house entitled Casa Del Sol. TeamOC was a collaboration with students and professors from UC Irvine, Chapman University, Irvine Valley College, and Saddleback College. Over a two year period, students and professors with support from local businesses designed and built their house with inspiration from the California Poppy. The official state flower of California closes its petals during nighttime, cold, or cloudy weather and opens during favorable daylight weather conditions. Some unique energy design features of the home included, horizontally rotating shades, a solar thermal hot water system providing heat for the clothes dryer, use of DC from solar panels to directly charge the electric vehicle along with other DC loads such as cell phones, and a 3-D printing room that created many of the homes lighting fixtures.

Contractor: Transportation Research Board	SCAQMD Cost-Share	\$ 32,500
	Cosponsors	
	SCAQMD's Legislative & Public Affairs Office	32,500
	Core Program Participating Members	191,000
Term: 01/01/15 – 12/31/15	Total Cost	\$ 256,000

Direct Pay: Participation for CY 2015 Membership in Transportation Research Board

In 2015 the SCAQMD supported the Transportation Research Board (TRB) by participating as a member. The mission of the TRB is to promote innovation and progress in transportation through research. In an objective and interdisciplinary setting, TRB facilitates the sharing of information on transportation practice and policy by researchers and practitioners; stimulates research and offers research management services that promote technical excellence; provides expert advice on transportation policy and programs; and disseminates research results broadly and encourages their implementation. TRB's varied activities annually engage more than 7,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest by participating on TRB committees, panels and task forces. TRB is one of six major divisions of the National Research Council (NRC) - a private, nonprofit institution that is jointly administered by the National Academy of Sciences, the National Academy of Engineering and the Institute of Medicine - and is the principal operating agency of the National Academies in providing services to the government, the public and the scientific and engineering communities. Sponsors and affiliates provide support for TRB core programs and activities. Sponsors are the major source of financial support for TRB's core technical activities. Federal, state, and local government agencies and professional societies and organizations that represent industry groups are eligible to be TRB sponsors. TRB's annual expenditures for program activities exceed \$90 million.

Direct Pay: Cosponsor 24 Conferences, Workshops & Events plus 5 Memberships and 1 Subscription

Contractor: Various		SCAQMD Cost-Share	\$ 257,571
	Cosponsors		
		Various	5,635,014
Term: $01/01/15 - 12/31/15$		Total Cost	\$ 5,892,585

The SCAQMD regularly participates in and hosts or cosponsors conferences, workshops and events. These funds provide support for the 24 conferences, workshops and events sponsored throughout 2015 as follows: Coordinating Research Council's 2015 Real World Emissions Workshop in March; Coordinating Research Council's 2015 Mobile Source Air Toxics Workshop in February; UC Davis's Asilomar 2015 Conference on Transportation & Energy Policy; 2015 Women in Green Forum in August; CTE's International Fuel Cell Bus Workshop in February; UC Irvine's ICEPAG/MGS in March; SCAQMD's Hydrogen Station Grand Opening in March; UC Riverside's PEMS Conference in March; GNA's Rethink Methane Symposium in June;

CSC Foundation's California Science Fir Awards in May; CleanTechOC's 2015 Symposium; Coordinating Research Council's 2015 Life Cycle Analysis Workshop in October; Adopt-A-Charger's National Drive Electric Week event in September; Burke Rix Communications' Southern California Energy & Water Summit in September; Platia Productions' Santa Monica AltCar Expo in September; Sequoia Foundation's California Asthma Research Conference in October; METRANS Transportation Center's International Urban Freight Conference in October; Clean Fuels Advisory Group participation fees for retreats in January and September; Fuel Cell Seminar & Energy Expo in November; CalETC's LA Auto Show in November; Fuel Cell Seminar booth participation; November Sensor Workshop speaker fees; and finally AWMA's 2016 International Atmospheric Optics Conference to be held in September 2016. Additionally, for 2015 four memberships were renewed for participation in the PEV Collaborative, the Fuel Cell & Hydrogen Energy Association, the Electric Drive Transportation Association, and the Air & Waste Management Association, and four 2016 one membership was renewed toward the end of CY 2015 for the Fuel Cell & Hydrogen Energy Association. One two-year subscription was also renewed for Automotive News. [This Page Intentionally Left Blank]

PROGRESS AND RESULTS IN 2015

Key Projects Completed

A large number of emission sources contribute to the air quality problems in the South Coast Air Basin. Given the diversity of these sources, there is no single technology or "silver bullet" that can solve all of the region's problems. Accordingly, the SCAQMD continues to support a wide range of advanced technologies, addressing not only the diversity of emissions sources, but also the time frame to commercialization of these technologies. Projects cofunded by the SCAQMD's Clean Fuels Program include emission reduction demonstrations for both mobile and stationary sources, although legislative requirements limit the use of available funds primarily to on-road mobile sources.

Historically, mobile source projects have targeted low-emission technology developments in automobiles, transit buses, medium- and heavy-duty trucks and off-road applications. These vehicle-related efforts have focused on: 1) advancements in engine design, electric power trains, energy storage/conversion devices (e.g., fuel cells and batteries); and 2) implementation of clean fuels (e.g. natural gas, propane and hydrogen) including associated infrastructure. Stationary source projects have included a wide array of advanced low NOx technologies and clean energy alternatives, such as fuel cells, solar power and other renewable energy systems.

Table 6 provides a list of 47 projects and contracts completed in 2015. Summaries of the completed technical projects are included in Appendix C. Selected projects which represent a range of key technologies from near-term to long-term are highlighted below.

Volvo Plug-In Hybrid Urban Delivery Truck Technology Demonstration

Using hybrid trucks for drayage application (and other local and regional haul applications) can reduce emissions and lowers fuel use significantly. The objective of this project with Volvo Technology of America was to develop, build and demonstrate a prototype Class 8 heavy-duty plug-in hybrid drayage truck with significantly reduced emissions and fuel use. The truck features a 6x2 Mack chassis at 60,000 GCW with the proprietary hybrid driveline, a new energy optimized battery, external charging interface and newly developed energy management and control systems suitable for port drayage application. By utilizing plug-in hybrid technology, fully zero-emission electric mode is possible for limited distances at low speeds, such as in a predetermined zero emission geo-fence. The integration of a plug-in hybrid powertrain with downsized engine (11L in lieu of 13L), along with several improvements to the complete vehicle efficiency are expected to add up to approximately 30% improvement in fuel economy.

The project was completed in July 2015 with a final demonstration of the concept vehicle on a simulated drayage route around Volvo's North American headquarters in Greensboro, NC. The route included all traffic conditions typical of drayage operation in Southern California as well as geo-fences defined to showcase the zero emission capabilities of the truck. The test vehicle successfully completed four consecutive trips with a gross combined weight of 44,000 lb., covering approximately 2 miles out of a total distance of 9 miles per trip in the Zero Emission geo-fence.

This project demonstrates new complete vehicle solutions that can offer significant benefits when applied to a specific duty cycle. This could lead to a change in policymaking for the transportation industry, focusing on reducing real-world emissions impacts of the overall transport solution instead of focusing on individual technologies. Volvo's future work will focus

on improving their analytical tools to better capture engine and exhaust after-treatment component behavior under start-stop or low speed conditions. Volvo believes that this will help identify robust strategies to control the complex plug-in hybrid energy management algorithms in order to maximize the emissions and energy benefits of the vehicle compared to its baseline.



Figure 18: Volvo's PHEV Drayage Truck

Develop, Integrate and Demonstrate Heavy-Duty Natural Gas Engines and Vehicles

On-road natural gas engines are now being used in limited basis as an alternative to diesel engines in transit, refuse and goods movement applications. While the number of these engines has grown, there is still a need to develop natural gas engines in the 11- to 14-liter range to fill the wide array of fleet applications currently served by diesel engines. In 2011, the Board awarded a contract to DOE's National Renewable Energy Laboratory to administer the development, integration and demonstration of heavy-duty natural gas engines and vehicles. The primary objectives of this project included the following:

- Develop a new, high-efficiency, high-performance, high-versatility, low-emissions, heavy-duty 11.9 liter natural gas engine and three-way catalyst after-treatment;
- Certify the new engine at or below EPA/CARB 2010 on-highway emission standards;
- Achieve fuel efficiency within 5-15% of comparable EPA/CARB 2010 on-highway certified diesel engines;
- Commercially launch the resulting "ISX12 G" engine by the end of 2012;
- Achieve OEM availability in a range of vehicles commonly used by fleet operators in the North American regional haul and vocational Class 8 truck and tractor market.

Cummins Westport Inc. (CWI), working as a subcontractor for NREL, successfully completed

the project and has developed a heavy-duty, sparkignited, stoichiometric, cooled exhaust gas recirculation (SI-EGR) natural gas engine certified to EPA/CARB heavy-duty on-highway 2013 emission standards. The SI-EGR engine development is based on the Cummins heavy-duty 11.9 liter diesel engine platform. CWI successfully released the ISX12 G engine to Limited Production manufacturing with ratings up to 350 HP and 1,450 lb-ft beginning in April 2013. This engine is targeted at regional haul tractor and vocational (e.g. refuse collection, concrete



Figure 19: ISX12 G Beta Engine

mixer) truck customers. The ISX12 G engine also meets the U.S. EPA greenhouse gas legislated requirements and EMD+ (Engine Manufacturer's Diagnostics) certification. CWI finalized the product development and validation work for additional engine performance ratings following Limited Production release and began shipping ISX12 G engines with ratings up to 400 HP and



Figure 20: Trucks Used in Demonstration

1450 lb-ft in August 2013.

Throughout the ISX12 G engine development program, CWI worked closely with numerous Class 8 truck and tractor OEMs to support their ISX12 G vehicle integration programs. As of the conclusion of this project, the ISX12 G engine is available as a factory-installed option in a number of Class 8 truck & tractor models from many OEMs, including Autocar, Freightliner, Kenworth, Mack, Peterbilt and Volvo.

Develop Retrofit Technology for Natural Gas Engines and In-Use Emissions Testing of On-Road Heavy-Duty Trucks

In December 2010, the Board awarded a contract to West Virginia University (WVU) to conduct in-use emissions testing, and if needed, to evaluate emission-reduction potential of retrofit technology on existing and new on-road heavy-duty vehicles. While the test results revealed that test vehicles' in-use emissions were lower than the 2010 U.S. EPA in-use or not-to-exceed emissions standards, ammonia emissions from natural gas vehicles were found to be significantly higher than expected due to the nature of spark-ignited engines. The initial evaluations of technologies to reduce emissions from natural gas engines indicate that a selective catalytic reduction (SCR) system is capable of reducing ammonia and further reducing NOx emissions. In October 2011, the Board amended the December 2010 u.S. EPA compliant heavy-duty diesel vehicle as the vehicle was driven over a 2,500-mile route between Morgantown WV and Riverside CA. The real-world in-use emissions assessment showed that the combined diesel particulate filter and SCR system achieved low levels of PM and NOx emissions for over 90% of the 2,500-mile trip characterized by mostly sustained freeway operation. The real-world in-use test results necessitate a need to enhance the assessment study to cover urban traffic conditions

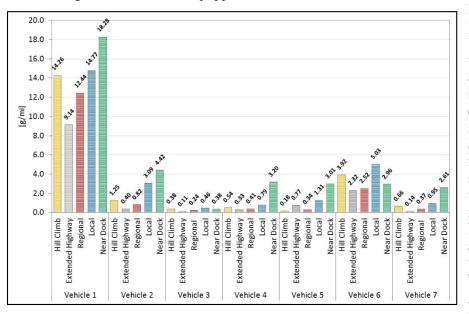
that are characteristic of heavy-duty vehicle operations in the South Coast Air Basin. In September 2013, the Board awarded a contract to WVU to develop, optimize, and enhance the SCR system to reduce ammonia and NOx emissions from a heavy-duty natural gas engine and conduct real-world in-use emissions testing of heavy-duty vehicles, each loaded to approximately 70,000 pounds, while driven over typical drayage truck routes in the Basin.

WVU evaluated real-world emissions from 7 heavy-duty diesel vehicles fueled by diesel and natural gas using a transportable emissions measurement system (TEMS) and a suite of portable emissions measurement system (PEMS)



Figure 21: Test Routes for Phase I Study

and investigated multiple pathways of using a passive SCR system for abatement of ammonia and NOx emissions from three-way catalyst (TWC) equipped on-road natural gas engines. The test routes represented real-world driving conditions in the Basin, and the data were segregated into five types of operation, including hill climb, extended highway, regional, local, and near-dock. The test vehicles were operated to and from the ports between Ontario, CA and Ports of LA. The resulting trip were categorized as regional, near-dock and local. Further, additional testing in Irvine, was included as a local urban delivery operation. The study included a MY 2008 Diesel truck to establish baseline emissions for a non-SCR equipped vehicle. Figure 2 shows the distance-specific NOx emissions from the test vehicles over the road measured using the TEMS. The results show that the highway operation resulted in the lowest emissions from all vehicles. Vehicle 7 showed the lowest emissions on highway operating conditions. The near-dock operation characterized by extended idle and creep mode operation resulted in the highest NOx emissions from the diesel vehicles. The average NOx emissions of diesel vehicles using DPF and SCR were 96% lower than a MY 2008 diesel vehicle over the regional cycle. The natural gas truck emissions were 50% lower than DPF-SCR equipped diesel over the regional cycle. The natural gas vehicle showed 88% lower NOx emissions during near-dock port operation compared to the average of all DPF-SCR equipped diesel vehicles.



In investigating the SCR system, WVU employed the SCR catalyst as a passive ammonia storage system that can use the NOx slip from TWC as a source to regenerate the stored ammonia while further reducing NOx. NOx slip will be an important issue with aging of TWC in a natural gas engine. An aging catalyst will have lower

Figure 22: Distance-Specific NOx Emissions from the 7 Test Vehicles

selectivity to NOx reduction and as a result have increased NOx emissions. Therefore a passive SCR system with TWC as the on-board ammonia storage can effectively lower the NOx profile of CNG through its useful life. For this purpose an old transit bus engine (MY 2009 Cummins ISLG 280) was procured to demonstrate the retrofit technology. The engine was tested in WVU engine laboratory at Morgantown, WV. Three SCR catalysts with varying SCR formulations were fitted downstream of the TWC to absorb the ammonia emissions from TWC as well as reduce NOx slip from the aged TWC. The figure below shows the ammonia and NOx reductions from the three different SCR formulations tested in the study. SCR 2 formulation showed the highest NOx conversion efficiency of 56.9% and the lowest NH3 reduction of 63.6%. While the SCR 3 formulation resulted in the highest NH3 reduction of 82.5% with slight reduction in NOx conversion to 53.9% compared to SCR 2 formulation. As a further extension to this Phase WVU is working with engine controls to change the air-fuel ratio (AFR) of the stoichiometric engine between rich mode (NH3 production mode) and lean mode (NH3 regeneration mode). It is believed that this approach could result in an engine calibration that could run on a leaner air fuel

ratio for enhanced fuel economy. This could potentially increase the operating range of a stoichiometric natural gas engine. The figure below shows the results of the AFR control strategy on the reduction NOx and NH3 emissions from a passive SCR system. The figure shows the increase in ammonia emissions when AFR shifts to rich or close to stoichiometric operation. This mode will be used to load the SCR catalyst with ammonia. Following 80-100% loading of the SCR catalyst, the AFR was shifted to slightly lean mode. This mode drops the ammonia production from the TWC to close to zero, while increasing the TWC out NOx emissions. However, the ammonia stored in the SCR is capable of reducing NOx to near-zero levels. However, the results also show a significant optimization of this strategy is required to develop a strategy that is highly efficient in fuel consumption, lower NOx and ammonia. WVU is conducting an in-depth study, beyond the scope of this project to develop this approach further.

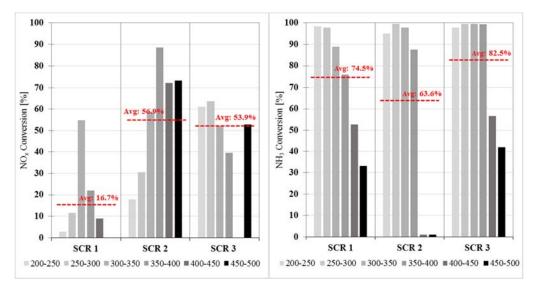


Figure 23: NOx and NH3 reduction efficiency results for varying temperature bins of three different tested zeolite SCR catalysts over an FTP cycle; [SCR 1] Iron (Fe) based low cell density zeolite catalyst, [SCR 2] Iron (Fe) based high cell density zeolite catalyst

Demonstration of Stationary Fuel Cells

In California, a substantial potential exists to capture generator waste heat with an absorption chiller and provide air conditioning to meet a wide spectrum of applications that have significant cooling demands throughout the year. Such combined cooling, heat and power (CCHP) systems offer benefits of increased energy efficiency and reduced emissions of both criteria pollutants and Greenhouse Gases (GHGs). Needed is an ultra-clean, integrated generator/absorption chiller product to enable the California market.

The SCAQMD contracted with UC Irvine which designed and developed a CCHP fuel cell system that was installed at the UC Irvine Medical Center (UCIMC). This system integrates a highly efficient, high-temperature molten carbonate fuel cell with an exhaust-fired absorption chiller, which utilizes the exhaust heat from the fuel cell to generate cooling. The system provides 1.4 MW of reliable, clean electricity and 200 tons of cooling to the medical centers building, while producing virtually zero criteria pollutants. Overall the system is expected to achieve an efficiency approaching 70%. The goal of this project was to provide a "showcase" installation that will inform the California architectural and developer communities of the attributes of fuel cell-based CCHP technology.

The system was installed by UCI's contractor the OHR Company, and was commissioned in December 2015 after completion of the interconnection agreement with Southern California

Edison. The project addressed CCHP technology with the combined benefits of reducing the emissions of GHGs and criteria pollutant emissions associated with electricity generation, distribution and use, enhancing California's economy through technology advancement, employment, and education, reducing the cost-of-electricity, and increasing the reliability and power quality of electricity.



High Temperature Fuel Cell / Absorption Chiller

Figure 24: UCI's CCHP System with Absorption Chiller Design

Contract	Contractor	Project Title	Date		
Electric/Hybri	Electric/Hybrid Technologies and Infrastructure				
08219	A123Systems Inc.	Develop and Demonstrate Ten Plug-In Hybrid Electric Vehicles	Jun-2015		
11204	AC Propulsion Inc.	Electric Conversion of Medium-Duty Fleet Vehicles	Nov-2015		
12862	Volvo Technology of America	Develop Class 8 Drayage Plug-In Hybrid Heavy-Duty Vehicle	Apr-2015		
13042	South Bay City Council of Governments	Demonstrate Battery Electric Vehicles	May-2015		
13251†	Selman Chevrolet Company	Lease Two 2012 or Newer Chevrolet Volt Extended-Range Electric Vehicles for Three Years	Nov-2015		
13418	City of Claremont	SoCalEV Ready EV Charger Installations	Dec-2015		
13419	California State University Los Angeles	SoCalEV Ready EV Charger Installations	Dec-2015		
13420	University of California Irvine	SoCalEV Ready EV Charger Installations	Dec-2015		
13421	County of Los Angeles	SoCalEV Ready EV Charger Installations	Jun-2015		
14053†	Electric Power Research Institute	Plug-In Hybrid EV Fleet Participation Agreement	Jul-2015		
14074	City of Santa Monica	SoCalEV Ready EV Charger Installations	Jun-2015		
14095	City of Covina	SoCalEV Ready EV Charger Installations	Dec-2015		
14153	University of California Santa Barbara	SoCalEV Ready EV Charger Installations	Jun-2015		
14199	Clean Fuel Connection, Inc.	SoCalEV Ready EV Charger Installations	Dec-2015		
14201	California State University San Bernardino	SoCalEV Ready EV Charger Installations	Jun-2015		
14207	City of Palmdale	SoCalEV Ready EV Charger Installations	Jun-2015		
14208	City of Lake Elsinore	SoCalEV Ready EV Charger Installations	Jun-2015		
14209	California State Polytechnic University Pomona	SoCalEV Ready EV Charger Installations	Jun-2015		
14210	California State University Long Beach, Office of Research and Sponsored Programs	SoCalEV Ready EV Charger Installations	Jun-2015		
14236	California State University Fullerton	SoCalEV Ready EV Charger Installations	Jun-2015		

Contract	Contractor	Project Title	Date	
Hydrogen an	Hydrogen and Mobile Fuel Cell Technologies and Infrastructure			
10046	Air Products and Chemicals, Inc.	Develop and Demonstrate Renewable Hydrogen Energy and Fueling Station	Nov-2015	
10061	Hydrogenics Corporation	Maintenance and Data Management for the SCAQMD Hydrogen Fueling Station	Jan-2015	
10066†	National Renewable Energy Laboratory	CRADA: Loan a 70 MPa Hydrogen Quality Sampling Apparatus to SCAQMD	Dec-2015	
12155†	University of California Irvine	Lease Toyota Fuel Cell Hybrid Vehicle	Dec-2015	
13259	Air Products and Chemicals, Inc.	"Five Cities" Program to Demonstrate Hydrogen Fueling Station Operation and Maintenance	Mar-2015	
13400	Energy Independence Now	Develop Hydrogen Station Investment Plan and Assess Policies and Incentives for Implementation	Dec-2015	
14622	California State University Long Beach, Office of Research and Sponsored Programs	CSULB Student Educational Project to Demonstrate Graphene Fuel Cell Catalysts	May-2015	
15020	University of California Irvine	Develop Sampling and Testing Protocols for Analyzing Impurities in Hydrogen	Oct-2015	
15419†	SunLine Transit Agency	Disposition of Dispenser from Hydrogenics Station Demonstration at SCAQMD	Dec-2015	
15596†	U.S. Hybrid	Transfer of Ownership of One Gaseous Hydrogen Electrolyzer, Compressor, Storage Tanks and Associated Hydrogen Equipment	Dec-2015	
15599†	City of Burbank	Bill of Sale and Transfer of Hydrogen Station Equipment	Mar-2015	
15666	Bevilacqua-Knight, Inc.	Participate in CaFCP for CY 2015 and Provide Support for Regional Coordinators	Dec-2015	

Table 6: Projects Completed between January 1 & December 31, 2015

Engine Systems

13168	INational Renewable Energy	CRADA: Develop, Integrate and Demonstrate Heavy-Duty Natural Gas Engines and Vehicles	Dec-2015
		venicies	

Fueling Infrastructure and Deployment (NG/RNG)

07243	City of Commerce	Purchase and Install New Public Access L/CNG Fueling Station	Dec-2015
07309	Post Company Grading	Repower One Off-Road Construction Vehicle	Jun-2015
07312	Mesa Contracting Corporation	Repower 11 Off-Road Construction Vehicles	Jun-2015

Contract	Contractor	Project Title	Date
Fuels/Emissie	ons Studies		
07236	National Renewable Energy Laboratory	Investigate the Role of Lubricating Oil on PM Emissions from Vehicles	Dec-2015
Stationary Cl	ean Fuel Technologies		
09303	Permacity Solar	Install an Approximate 40kW (AAC) Crystalline Silicon System at SCAQMD Headquarters	Jan-2015
13030	University of California Irvine	Demonstrate a 300 kW Molten Fuel Cell with an Exhaust-Fired Absorption Chiller	Apr-2015
Emission Co	ntrol Technologies		
15347	West Virginia University Research Corporation	Develop Retrofit Technology for Natural Gas Engines and In-Use Emissions Testing of On- Road Heavy-Duty Trucks	Nov-2015
Outreach and	Technology Transfer	· · · · ·	
09337†	Mark Weekly, CPA	Follow-Up Assessment of SCAQMD's Compliance with Special Revenue Funds	Jan-2015
11028†	Martin Kay	Technical Assistance on Stationary Source Control Measures and Future Consultation on TAO Activities	Dec-2015
11484	Gladstein, Neandross & Associates LLC	Operate Truck Outreach Centers – Trucking Information Points (FIPS)	Jan-2015
12486†	ICF Resources LLC	Technical Assistance with Goods Movement and Zero-Emission Transportation Technologies	Sep-2015
15505†	Coordinating Research Council, Inc.	Cosponsor 25th Annual CRC Real-World Emissions Workshop	Jun-2015
15506†	Coordinating Research Council, Inc.	Cosponsor the 2015 CRC Mobile Source Air Toxics Workshop	May-215
16029†	Three Squares Inc.	Cosponsor 2015 The Women in Green Forum	Nov-2015

Table 6: Projects Completed between January 1 & December 31, 2015

[†]Two-page summary reports (as provided in Appendix C) are not required for level-of-effort technical assistance contracts, leases or cosponsorships; or it was unavailable at time of printing this report.

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CLEAN FUELS PROGRAM 2016 PLAN UPDATE

The Clean Fuels Program (Program) was first created in 1988, along with the SCAQMD's Technology Advancement Office (TAO). Funding for the Program is received through a \$1 motor vehicle registration fee. The Clean Fuels Program continually seeks to support the development and deployment of zero and near-zero emission technologies over a broad array of applications and spanning near- and long-term implementation. Planning has been and remains an ongoing activity for the Program, which must remain flexible to address evolving technologies as well as the latest progress in the state-of-technologies, new research areas and data.

Every year the SCAQMD re-evaluates the Clean Fuels Program based on the region's ongoing need for emissions reductions and develops a Plan Update for the upcoming calendar year (CY) targeting near-term projects to help achieve those reductions.

Overall Strategy

The overall strategy of the SCAQMD's Clean Fuels Program is based primarily on technology needs identified through the AQMP process and the SCAQMD Board's directives to protect the health of residents in Southern California, which encompasses approximately 16.8 million people (nearly half the population of California). The AQMP is the long-term "blueprint" that defines:

- basin-wide emission reductions needed to achieve federal ambient air quality standards;
- regulatory measures to achieve those reductions;
- timeframes to implement these proposed measures; and
- technologies required to meet these future proposed regulations.

The preliminary 2016 AQMP projects that an approximate 50 percent reduction in NOx is required by 2023 and a 65 percent reduction by 2031, the majority of which must come from mobile sources. These emission reduction needs are further identified in CARB's recent draft discussion document "Mobile Source Strategy" (October 2015). Moreover, the SCAQMD is currently only one of two regions in the nation recognized as an extreme ozone nonattainment area (the other is San Joaquin Valley). Ozone (a key component of smog) is created by a chemical reaction between NOx and VOCs emissions at ground level. This is especially noteworthy because the largest contributor to ozone is NOx emissions, and mobile sources (on- and off-road as well as aircraft and ships) contribute to more than three-fourths of the NOx emissions in this region. Furthermore, NOx and VOC emissions also lead to the formation of PM2.5, particulate matter measuring 2.5 microns in size as contained in a cubic meter of air, expressed as micrograms per cubic meter ($\mu g/m^3$).

The preliminary 2016 AQMP includes integrated strategies and measures to demonstrate attainment of the following National Ambient Air Quality Standards (NAAQS):

- 8-hour Ozone (75 parts per billion or ppb) by 2031
- Annual PM2.5 (12 µg/m³) by 2021-2015
- 8-hour Ozone (80 ppb) by 2023 (updated from the 2012 AQMP)
- 1-hour Ozone (120 ppb) by 2022 (updated from the 2012 AQMP)
- 24-hour PM2.5 ($35 \mu g/m^3$) by 2019 (updated from the 2012 AQMP)

The 2016 AQMP will also take an initial look at the emission reductions needed to meet the new federal 8-hour ozone air quality standard of 70 ppb anticipated to be attained by 2037.

The daunting challenge to reduce NOx and PM2.5 require the Clean Fuels Program to encourage and accelerate advancement of transformative fuel and transportation technologies, leading the way for commercialization of progressively lower-emitting fuels and vehicles. The NOx and VOC emission sources of greatest concern to this region are heavy-duty on-road and off-road vehicles. To underscore this concern, the 2013 Vehicle Technologies Market Report⁴, released in early 2014 by the Oak Ridge National Laboratory for the Department of Energy, and corroborated by EMFAC 2011 projections, notes that Class 8 trucks comprise 41% of the medium- and heavy-duty truck fleet but consume 78% of the fuel use in this sector. This is especially significant since the report also notes that Class 8 truck sales have continued to increase significantly since 2009. Given the relationship between NOx, ozone and PM2.5, the 2016 Plan Update must emphasize emission reductions in all these areas.

Since the last AQMP, it has become clear that the effect of moving containers through the Ports of Los Angeles and Long Beach and the subsequent movement of goods throughout the region not only have a dramatic impact on air quality but also the quality of life in the communities along the major goods movement corridors. In recognition of these impacts, the SCAQMD added as a key element to its strategy a concerted effort to develop and demonstrate zero and near-zero emissions' goods movement technologies, such as electric trucks, plug-in hybrid trucks with all-electric range, zero emission container transport technologies, trucks operating from wayside power including catenary technology and heavy-duty technologies. The findings from the MATES IV⁵, which included local scale studies near large sources such as ports and freeways, reinforce the importance of these impacts and the need for transformative transportation technologies, especially near the ports and goods movement corridor.

For over 20 years, a key strategy of the Clean Fuels Program has been its implementation as a publicprivate partnership in conjunction with private industry, technology developers, academic institutions, research institutions and government agencies. This public-private partnership has allowed the Program to leverage its funding with \$3-\$4 of spending on R&D projects to every \$1 of SCAQMD funds. However, while the SCAQMD aggressively seeks leverage funds to accomplish more with every dollar, it also strives to act as a leader in technology development and commercialization in an effort to accelerate the reduction of criteria pollutants.

As the state and federal governments have turned a great deal of their attention to climate change, the SCAQMD has remained committed to developing, demonstrating and commercializing zero and near-zero emission technologies. Fortunately many, if not the majority, of technology sectors that address our need for NOx reductions also garner greenhouse gas (GHG) reductions. Due to these "cobenefits," we have been successful in partnering with the state and federal grants.

Funding Scope

This 2016 Plan Update includes projects to develop, demonstrate and commercialize a variety of technologies, from near-term to long-term, that are intended to provide solutions to the emission control measures identified in the preliminary 2016 AQMP to address the increasing challenges this region is facing to meet air quality standards, including:

⁴ <u>http://cta.ornl.gov/vtmarketreport/index.shtml</u>

⁵ <u>http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv</u>

- 1) new and changing federal requirements, such as the recently adopted lower federal 8-hour ozone standard of 70 ppb;
- 2) implementation of new technology measures; and
- 3) continued development of economically sound compliance approaches.

The scope of projects in the 2016 Plan Update also needs to remain sufficiently flexible to address new challenges and proposed methodologies that are identified in the preliminary 2016 AQMP, consider dynamically evolving technologies, and incorporate new research and data. The latter, for example, includes the findings from the MATES IV study, which was undertaken to update the emissions inventory of toxic air contaminants, measure the concentration of ultrafine particles and black carbon (an indicator of diesel particulate emissions), and conduct a regional modeling effort to characterize risk to health across the Basin.

Finally, the co-benefits of technologies should also be considered in light of the increasing call for action by the federal government and California's Governor to reduce carbon and greenhouse gases. These actions include President Obama's Climate Action Plan, which notes in the June 2015 progress report that any delays in tackling climate change will come at a huge price (e.g., national security and the economy). But more recently and significantly to this region are Governor Brown's actions including: 1) his Executive Order issued last spring setting a new interim goal to reduce GHGs 40 percent below 1990 levels by 2030, the most ambitious target in North America; 2) his remarks last fall outlining goals to reduce black carbon by 50 percent (and methane and hydrofluorocarbons or HFCs by 40 percent) below current levels by 2030; and 3) his January 2015 state-of-the-state address in which he called for an increase in the amount of electricity generated from renewable sources from 33 to 50 percent as well as reducing the use of petroleum in cars and trucks by up to 50 percent from today's levels. Notably, SB 350 (De León), which the Governor signed last fall, would have codified the Governor's goals outlined in his January 2015 inaugural address, but was amended to remove the 50 percent reduction of petroleum use in cars and trucks. SB 350 still dramatically reshapes California's energy economy, and the Governor has noted his office still has the authority to reduce oil use in vehicles without the bill.

The Clean Air Act, in addition to providing for specific control measures based on known technologies and control methods, has provisions for more general measures based on future, yet-tobe-developed technologies. These "black box" measures are provided under Section 182(e)(5) of the Clean Air Act for regions that are extreme non-attainment areas, such as the South Coast Basin. In the past, some of the technologies that have been developed and demonstrated in the Clean Fuels Program may have served as control measures for the "black box." However, the 2016 AQMP calls for elimination on the reliance of these "black box" (future technologies) to the maximum extent possible.

Within the core technology areas defined later in this section, there exists a range of projects that represent near-term to long-term efforts. The SCAQMD Clean Fuels Program tends to support development, demonstration and technology commercialization efforts, or deployment, rather than fundamental research. The general time-to-product for these efforts, from long-term to near-term, is described below.

• Most technology *development* projects are expected to begin during 2016 with durations of about two years. Additional field demonstrations to gain long-term verification of performance, spanning up to two years, may also be needed prior to commercialization. Certification and ultimate commercialization would be expected to follow. Thus, development projects identified in this plan may result in technologies ready for commercial introduction as soon as 2019-2020. Projects are also proposed that may involve the development of emerging technologies that are considered longer term and, perhaps higher risk, but with significant emission reduction

potential. Commercial introduction of such long-term technologies would not be expected until 2020 or later.

- More mature technologies, those ready to begin field *demonstration* in 2016, are expected to result in a commercial product in the 2017-2018 timeframe. Technologies being field demonstrated generally are in the process of being certified. The field demonstrations provide a controlled environment for manufacturers to gain real-world experience and address any end-user issues that may arise prior to the commercial introduction of the technology. Field demonstrations provide real-world evidence of a technology's performance to help allay any concerns by potential early adopters.
- *Deployment* or technology commercialization efforts focus on increasing the utilization of clean technologies in conventional applications. It is often difficult to transition users to a non-traditional technology or fuel, even if such a technology or fuel offers significant societal benefits. As a result, in addition to government's role to reduce risk by funding technology development and testing, one of government's roles is to support and offset any incremental cost through incentives to help accelerate the transition and use of the cleaner technology. The increased use and proliferation of these cleaner technologies often depends on this initial support and funding as well as efforts intended to increase confidence of stakeholders that these technologies are real, cost-effective in the long term and will remain applicable.

Core Technologies

As previously noted, the SCAQMD Clean Fuels Program maintains flexibility to address dynamically evolving technologies incorporating the latest state-of-the-technology progress. Over the years, the SCAQMD has provided funding for projects for a wide variety of low and zero emission projects. In order to meet the upcoming 2023 8-hour ozone standard, the areas of zero and near-zero emission technologies need to be emphasized. The working definition of "near-zero" is an order of magnitude lower than the existing 0.2 g/bhp-hr NOx or 0.02 g/bhp-hr NOx, close to a combined cycle power plant emissions rate. This effort can be seen in the following sections and in the proposed funding distribution in Figure 25 (page 77). The major core technology areas are identified below with specific project categories discussed in more detail in the following sections. The core technology areas identified reflect the staff's forecast for upcoming projects and needs within the basin but is not intended to be considered a budget.

Not all project categories will be funded due to cost-share constraints, and focus will be on the control measures identified in the 2012 AQMP and potentially the Draft 2016 AQMP, with consideration for availability of suitable projects. The technical areas identified below are clearly appropriate within the context of the current air quality challenges and opportunities for technology advancement. Within these areas there is significant opportunity for SCAQMD to leverage its funds with other funding agencies to expedite the implementation of cleaner alternative technologies in the Basin. A concerted effort is continually made to form private partnerships to leverage Clean Fuels funds. For example, staff anticipates there will be upcoming opportunities to leverage state funding through the California Clean Truck, Bus and Off-Road Vehicle and Equipment Technology Program (created by SB 1204, chaptered in September 2014), which designates money from the state's cap-and-trade program for development, demonstration and early commercialization of zero and near-zero emission truck, bus and off-road vehicles, and the Low Carbon Transportation Greenhouse Gas Emission Reduction Fund, which includes funding for zero-emission drayage trucks and truck and bus pilot projects, especially in disadvantaged communities. Finally, several of the core technologies discussed below are synergistic. For example, a heavy-duty vehicle such as a transit bus or dravage truck, may utilize an electric drive train with a fuel cell operating on hydrogen fuel or an internal combustion engine operating on natural gas or another alternative fuel as a range extender.

These priorities may shift during the year in keeping with the diverse and flexible "technology portfolio" approach. Changes in priority may occur to: (1) capture opportunities such as cost-sharing by the state government, the federal government, or other entities; or (2) address specific technology issues which affect residents within the SCAQMD's jurisdiction.

The following nine core technology areas are listed by current SCAQMD priorities based on the goals for 2016.

Electric/Hybrid Technologies & Infrastructure

If the region expects to meet the federal standards for PM2.5 and ozone, a primary focus must be on zero and near-zero emission technologies. A leading strategy to achieve these goals is the wide-scale implementation of electric drive systems for all applicable technologies. With that in mind, the SCAQMD supports projects to address the main concerns regarding cost, battery lifetime, travel range, charging station infrastructure and original equipment manufacturer (OEM) commitment. Integrated transportation systems can encourage further reduction of emissions by matching the features of electric vehicles (zero emissions, zero start-up emissions, modest all electric range) to typical consumer demands for mobility by linking them to transit. Additionally, the impact of fast charging on battery life and infrastructure costs needs to be better understood.

The development and deployment of zero emission goods movement systems remains one of the top priorities for the SCAQMD to support a balanced and sustainable growth in the port complex. The SCAQMD continues to work with our regional partners, in particular the Ports of Los Angeles and Long Beach, the Southern California Association of Governments (SCAG) and Los Angeles County Metropolitan Transportation Association (LACMTA) to identify technologies that could be beneficial to and garner support from all stakeholders. Specific technologies include zero emission trucks (using batteries and/or fuel cells), near-zero emission trucks with all-electric range using wayside power (catenary or roadbed electrification) or with plug-in hybrid powertrains, locomotives with near-zero emissions (e.g., 90% below Tier 4), electric locomotives using battery tender cars and catenary, and linear synchronous motors for locomotives and trucks. In fact, last year, the California Cleaner Freight Coalition, in a report entitled *Moving California Forward: Zero and Low-Emissions Freight Pathways*⁶ pointed out that the short distances between freight hubs make electrification a viable option for local freight haul heavy-duty trucks, and in some cases, for on-dock rail which could eliminate some local freight truck trips altogether.

There is a high level of major automobile manufacturers' activity to develop and introduce hybridelectric technologies in light-, medium- and heavy-duty applications as well as off-road equipment. In particular, there are increasing numbers of diesel- and gasoline-fueled hybrid-electric vehicles and multiple models of light-duty plug-in hybrid and battery electric vehicles (BEVs). Such vehicles offer the benefits of higher fuel economy and range, as well as lower emissions. Hybrid electric technology is not limited to gasoline and diesel engines and can be coupled with natural gas engines (including natural gas engines operating on renewable natural gas), microturbines, and fuel cells for further emission benefits. Additionally, continued advancements in the light-duty arena which, while there is commercially available product, is not yet mainstream technology, may have applications for medium- and heavy-duty vehicles. In fact, the goal of SB 1275 (de León), chaptered in September 2014 establishing the Charge Ahead California Initiative, is to bring one million zero and near-zero emission electric vehicles to California by 2023 as well as to ensure that disproportionally impacted communities benefit from this transition toward cleaner transportation.

⁶ http://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean_vehicles/Moving-California-Forward-Executive-Summary.pdf

Opportunities to develop and demonstrate technologies that could enable expedited widespread use of electric and hybrid-electric vehicles in the Basin include the following:

- demonstration of electric and hybrid technologies for cargo container transport operations, e.g., heavy-duty battery electric or plug-in electric drayage trucks with all electric range;
- demonstration of medium-duty electric and hybrid electric vehicles in package delivery operations, e.g., electric walk-in vans with fuel cell or CNG range extender ;
- development and demonstration of CNG hybrid vehicle;
- demonstration of niche application battery electric vehicles, including school and transit buses with short-distance fixed service routes;
- demonstration of integrated programs that make best use of electric drive vehicles through interconnectivity between fleets of electric vehicles and mass transit, and web-based reservation systems that allow multiple users;
- demonstration of hydraulic hybrid vehicles in heavy-duty cycles with frequent stop-and-go operations, e.g., refuse haulers;
- development of streamlined implementation procedures to prepare and accelerate EV market penetration and commercialization; and
- demonstration and installation of EV infrastructure to support the electric and hybrid-electric vehicle fleets currently on the roads or soon entering the market, and to reduce cost, improve convenience and integrate with renewable energy and building demand management strategies (e.g., vehicle-to-grid or vehicle-to-building functionality).

Hydrogen & Fuel Cell Technologies & Infrastructure

The SCAQMD supports hydrogen infrastructure and fuel cell technologies as one option in our technology portfolio and is dedicated to assisting federal and state government programs to deploy light-duty fuel cell vehicles (FCVs) by supporting the required refueling infrastructure.

In mid-2014 the California Fuel Cell Partnership (CaFCP), with which the SCAQMD works closely as a participating member to further commercialize fuels cells for transportation and installation of the required infrastructure, published the Hydrogen Progress, Priorities and Opportunities (HyPPO)⁷. The HyPPO builds upon CaFCP's 2012 roadmap describing the first network of commercial hydrogen stations in California, which calls for 68 hydrogen fueling stations in cluster communities at specific destinations by 2016. The state's current goal, however, is 100 stations for launching a commercially self-sustaining network to support the growing number of fuel cell vehicles to implement the state's ZEV Action Plan. Over the last three years CEC funding awards using AB 8 dollars, along with financial support from SCAQMD, have made significant inroads to creating the growth path to 100 hydrogen stations. Additional support to encourage renewable hydrogen will be needed. Furthermore, the CaFCP is currently finalizing a medium-/heavy-duty vehicle action plan in coordination with multiple members.

Calendar Years 2015-2017 are a critical timeframe for the introduction of FCVs. In 2015, Toyota commercialized the first FCV available to consumers for purchase, with Hyundai being the first to already offer a FCV for lease in 2014. Honda, along with other OEMS, has also disclosed plans to commercialize FCVs in 2016. Since hydrogen refueling stations need 18-36 month lead times for permitting, construction and commissioning, plans for stations need to be implemented now. While coordination efforts with the Division of Measurement Standards to establish standardized measurements for hydrogen fueling started in 2014, additional efforts to offer hydrogen for sale to general consumers are still needed. In addition, new business models and new sources of funding

⁷ <u>http://cafcp.org/sites/default/modules/pubdlcnt/pubdlcnt.php?file=http://cafcp.org/sites/files/Roadmap-Progress-Report2014-FINAL.pdf&nid=2560</u>

besides grants for construction need to be explored to enable the station operations to remain solvent during the early years until vehicle numbers ramp up. Lastly, a deliberate and coordinated effort is necessary to ensure that the retail hydrogen stations are developed with design flexibility to address specific location limitations, and with refueling reliability matching those of existing gasoline and diesel fueling stations.

Commencing late 2012, the CEC, which based its AB 118 hydrogen funding strategy on CaFCP's roadmap and the University of California, Irvine's Advanced Power and Energy Program, issued multiple Program Opportunity Notices for hydrogen fuel infrastructure and to date has awarded funding for 51 new hydrogen fueling stations plus operation and maintenance grants for a few of the original older stations. Additionally, the SCAQMD is currently implementing a \$6.7 million CEC grant awarded in 2013 to upgrade and refurbish four of the existing hydrogen fueling stations to ensure legacy stations continue operation as FCVs become available in the market. In 2014, the SCAQMD also received an award of \$300,000 from CEC to implement a plan for hydrogen readiness in early market communities and that effort is currently underway. The SCAQMD will work closely with state agencies to implement these programs and continue efforts to upgrade and refurbish existing hydrogen infrastructure.

The 2016 Plan Update identifies key opportunities while clearly leading the way for pre-commercial demonstrations of OEM vehicles. Future projects may include the following:

- continued development and demonstration of distributed hydrogen production and fueling stations, including energy stations with electricity and hydrogen co-production and higher pressure (10,000 psi) hydrogen dispensing;
- development and demonstration of cross-cutting fuel cell applications (e.g. plug-in hybrid fuel cell vehicles);
- development and demonstration of fuel cells in off-road, locomotive and marine applications;
- demonstration of fuel cell vehicles in controlled fleet applications in the Basin; and
- development and implementation of strategies with government and industry to build participation in the hydrogen market including certification and testing of hydrogen as a commercial fuel to create a business case for investing as well as critical assessments of market risks to guide and protect this investment.

Engine Systems

Natural gas engines are experiencing huge market growth due to the low cost of fuel. In order to achieve the emission reductions required for the South Coast Air Basin, the internal combustion engines (ICEs) used in the heavy-duty sector will require emissions of 90% lower than the 2010 standards. Future projects will support the development, demonstration and certification of engines that can achieve these massive emission reductions using an optimized systems approach. Specifically, these projects are expected to target the following:

- development of ultra-low emission, natural gas engines for heavy-duty vehicles and high horsepower applications;
- continued development and demonstration of alternative fuel medium-duty and heavy-duty engines and vehicles;
- development and demonstration of alternative fuel engines for off-road applications;
- evaluation of alternative engine systems such as hydraulic plug-in hybrid vehicles; and
- development and demonstration of engine systems that employ advance fuel or alternative fuels, engine design features, improved exhaust or recirculation systems, and aftertreatment devices.

Fueling Infrastructure and Deployment

The importance of natural gas, renewable natural gas and related refueling infrastructure cannot be overemphasized for the realization of large deployment of alternative fuel technologies. Significant demonstration and commercialization efforts funded by the Clean Fuels Program as well as other local, state and federal agencies are underway to: 1) support the upgrade and buildup of public and private infrastructure projects, 2) expand the network of public-access and fleet fueling stations based on the population of existing and anticipated vehicles, and 3) put in place infrastructure that will ultimately be needed to accommodate transportation fuels with very low gaseous emissions.

Compressed and liquefied natural gas (CNG and LNG) refueling stations are being positioned to support both public and private fleet applications. Upgrades and expansions are also needed to refurbish or increase capacity for some of the stations installed five or more years ago as well as standardize fueling station design, especially to ensure growth of alternative fuels throughout the South Coast Air Basin and beyond, along with partial or complete transition to renewable natural gas delivered through the pipeline. Funding has been provided at key refueling points for light-, medium-and heavy-duty natural gas vehicle users traveling from the local ports, along I-15 and The Greater Interstate Clean Transportation Corridor (ICTC) Network. SB 350 (De León) further establishes a target to double the energy efficiency in electricity and natural gas end uses by 2030.

Active participation in the development of National Fire Protection Association (NFPA) fire and safety codes and standards, evaluation of the cost and economics of the new fuels, public education and training and emergency response capability are just a few areas of the funded efforts that have overcome public resistance to these new technologies. Some of the projects expected to be developed and cofunded for infrastructure development are:

- development and demonstration of renewable natural gas as a vehicle fuel from renewable feedstocks and biowaste;
- development and demonstration of advanced, cost effective methods for manufacturing synthesis gas for conversion to renewable natural gas;
- enhancement of safety and emissions reduction from natural gas refueling equipment;
- expansion of fuel infrastructure, fueling stations, and equipment; and
- expansion of infrastructure connected with existing fleets, public transit, and transportation corridors, including demonstration and deployment of closed loop systems for dispensing and storage.

Health Impacts, Emissions and Fuel Studies

The monitoring of pollutants in the Basin is extremely important, especially when focused on (1) a particular sector of the emissions inventory (to identify the responsible technology) or (2) exposure to pollution (to assess the potential health risks). In fact, studies indicate that smoggy areas can produce irreversible damage to children's lungs. This information highlights the need for further emissions and health studies to identify the emissions from high polluting sectors as well as the health effects resulting from these technologies.

Over the past few years, the SCAQMD has funded emission studies to evaluate the impact of tailpipe emissions of biodiesel and ethanol fueled vehicles mainly focusing on criteria pollutants and greenhouse gas (GHG) emissions. These studies showed that biofuels, especially biodiesel, can contribute to higher NO_x emissions while reducing other criteria pollutant emissions. Furthermore, despite recent advancements in toxicological research related to air pollution, the relationship between particle chemical composition and health effects is still not completely understood, especially for biofuels. Therefore, a couple of years ago the SCAQMD funded studies to investigate the physical and chemical composition and toxicological potential of tailpipe PM emissions from biodiesel and ethanol fueled vehicles to better understand their impact on public health. Studies continued in 2015 to further investigate the toxicological potential of emissions, such as ultrafine particles and vapor phase substances, and to determine whether or not other substances such as volatile or semi-volatile organic compounds are being emitted in lower mass emissions that could pose harmful health effects.

In recent years, there has also been an increased interest both at the state and national level on the use of alternative fuels including biofuels to reduce petroleum oil dependency, GHG emissions and air pollution. In order to sustain and increase biofuel utilization, it is essential to identify feedstocks that can be processed in a more efficient, cost-effective and sustainable manner. One such fuel that the Clean Fuels Program is interested in pursuing is dimethyl ether (DME). This synthetic fuel can be made from renewable natural gas resources and has characteristics similar to gas-to-liquids fuels, i.e., high cetane, zero aromatics and negligible emissions of particulate matter. Volvo has considered commercializing Class 8 trucks using DME, and staff would like to ensure these trucks have lower NOx than the existing standard. A study in the 2015-2016 timeframe on DME is being proposed.

Some areas of focus include:

- demonstration of remote sensing technologies to target different high emission applications and sources;
- studies to identify the health risks associated with ultrafine and ambient particulate matter including their composition to characterize their toxicity and determine specific combustion sources;
- in-use emissions studies using biofuels, including DME to evaluate in-use emission composition;
- in-use emissions studies to determine the impact of new technologies, in particular PEVs on local air quality as well as the benefit of telematics on emissions reduction strategies;
- lifecycle energy and emissions analyses to evaluate conventional and alternative fuels; and
- analysis of fleet composition and its associated impacts on criteria pollutants.

Stationary Clean Fuel Technologies

Although stationary source emissions are small compared to mobile sources in the South Coast Air Basin, there are areas where cleaner fuel technology can be applied to reduce NOx, VOC and PM emissions. For example, a recent demonstration project funded in part by the SCAQMD at a local sanitation district consisted of retrofitting an existing biogas engine with a digester gas cleanup system and catalytic exhaust emission control. The retrofit system resulted in significant reductions in NOx, VOC and CO emissions. This project demonstrated that cleaner, more robust renewable distributed generation technologies exist that could be applied to not only improve air quality, but enhance power quality and reduce electricity distribution congestion.

The use of renewable feedstocks for energy production is a possible option to provide sustainable power for future needs while reducing greenhouse gas emissions and achieving domestic energy diversity. One of the projects that the SCAQMD recently supported in this effort was a bench scale demonstration project using a steam hydrogasification process to produce natural gas from biomass and biosolid (sewage sludge) feedstocks. Steam Hydrogasification Reaction (SHR) has been developed to produce various forms of energy products from carbonaceous resources. SHR is capable of handling wet feedstocks like sludge, does not require expensive oxygen plants and has been demonstrated to be most efficient and cost-effective compared to other conventional gasification technologies. This project successfully demonstrated that the SHR process coupled with a water-gas shift (WGS) reactor can produce gas containing up to 90% methane.

Additionally, alternative energy storage could be achieved through vehicle-to-grid or vehicle-tobuilding technologies. The University of California Riverside's Sustainable Integrated Grid Initiative, funded in part by the SCAQMD and launched in 2014, for example could assist in the evaluation of these technologies. Projects conducted under this category may include:

- development and demonstration of reliable, low emission stationary technologies (e.g., low NOx burners, fuel cells or microturbines);
- exploration of renewables as a source for cleaner stationary technologies;
- evaluation, development and demonstration of advanced control technologies for stationary sources; and
- vehicle-to-grid or vehicle-to-building demonstration projects to develop sustainable, low emission energy storage alternatives.

Emission Control Technologies

Although engine technology and engine systems research is required to reduce the emissions at the combustion source, dual fuel technologies and post-combustion cleanup methods are also needed to address the current installed base of on-road and off-road technologies. Existing diesel emissions can be greatly reduced with introduction of natural gas into the engine or via aftertreatment controls such as particulate matter (PM) traps and catalysts, as well as lowering the sulfur content or using additives with diesel fuel. Gas-to-Liquid (GTL) fuels, formed from natural gas or other hydrocarbons rather than petroleum feedstock and emulsified diesel, provide low emission fuels for use in diesel engines. As emissions from engines become lower and lower, the lubricant contributions to VOC and PM emissions become increasingly important. The most promising of these technologies will be considered for funding, specifically:

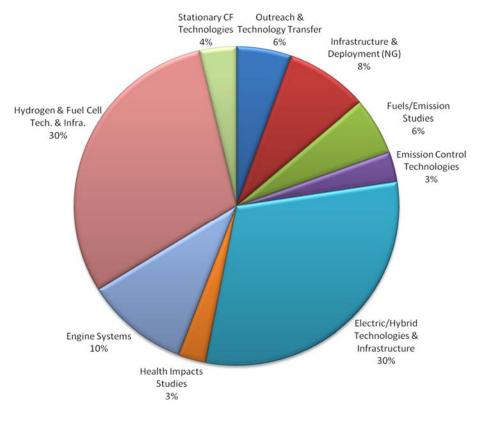
- evaluation and demonstration of new emerging liquid fuels, including alternative and renewable diesel and GTL fuels;
- development and demonstration of dual fuel engines and advanced aftertreatment technologies for mobile applications (including diesel particulate traps and selective catalytic reduction catalysts); and
- development and demonstration of low-VOC and PM lubricants for diesel and natural gas engines.

Outreach and Technology Transfer

Since the value of the Clean Fuels Program depends on the deployment and adoption of the demonstrated technologies, outreach and technology transfer efforts are essential to its success. This core area encompasses assessment of advanced technologies, including retaining outside technical assistance as needed, efforts to expedite the implementation of low emission and clean fuels technologies, coordination of these activities with other organizations and information dissemination to educate the end user. Technology transfer efforts include support for various clean fuel vehicle incentive programs as well.

Target Allocations to Core Technology Areas

Figure 25 below presents the potential allocation of available funding, based on SCAQMD projected program costs of \$16.4 million for all potential projects. The expected actual project expenditures for 2016 will be less than the total SCAQMD projected program cost since not all projects will materialize. The target allocations are based on balancing technology priorities, technical challenges and opportunities discussed previously and near-term versus long-term benefits with the constraints on available SCAQMD funding. Specific contract awards throughout 2016 will be based on this



proposed allocation, the quality of proposals received and evaluation of projects against standardized criteria and ultimately SCAQMD Governing Board approval.

Figure 25: Projected Cost Distribution for Potential SCAQMD Projects in 2016 (\$16.4M)

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PROGRAM PLAN UPDATE FOR 2016

This section presents the Clean Fuels Program Plan Update for 2016. The proposed projects are organized by program areas and described in further detail, consistent with the SCAQMD budget, priorities and the best available information on the state-of-the-technology. Although not required, this Plan also includes proposed projects that may be funded by revenue sources other than the Clean Fuels Program, specifically related to VOC and incentive projects.

Table 7 summarizes potential projects for 2016 as well as the distribution of SCAQMD costs in some areas as compared to 2015. The funding allocation continues the focus toward development and demonstration of zero and near-zero emission technologies including the infrastructure for such technologies. For the 2016 Plan, the SCAQMD shifts some emphasis onto electric and hybrid-electric technologies in order to take advantage of funding opportunities afforded by the Greenhouse Gas Reduction Fund Program and the need to continue electrifying goods movement technologies. Focus will continue concurrently on hydrogen and fuel cells given sustained activities by federal and state government and the anticipated roll out of fuel cell vehicles in 2016-2017. A small funding shift to Fueling Infrastructure and Deployment (natural gas and renewable fuels) is also recommended, with modest decreases in other areas given awards over the last year or two. As in prior years, the funding allocations again align well with the SCAQMD's FY 2015-16 Goals and Priority Objectives. Overall, the Program is designed to ensure a broad portfolio of technologies and leverage state and federal efforts, and maximize opportunities to leverage technologies in a synergistic manner.

Each of the proposed projects described in this Plan, once fully developed, will be presented to the SCAQMD Governing Board for approval prior to contract initiation. This development reflects the maturity of the proposed technology and identifies contractors to perform the projects, participating host sites, and securing sufficient cost-sharing needed to complete the project and other necessary factors. Recommendations to the SCAQMD Governing Board will include descriptions of the technology to be demonstrated and in what application, the proposed scope of work of the project and the capabilities of the selected contractor and project team, in addition to the expected costs and expected benefits of the projects as required by H&SC 40448.5.1.(a)(1). Based on communications with all of the organizations specified in H&SC 40448.5.1.(a)(2) and review of their programs, the projects proposed in this Plan do not appear to duplicate any past or present projects.

Funding Summary of Potential Projects

The remainder of this section contains the following information for each of the potential projects summarized in Table 7 (page 81).

Proposed Project: A descriptive title and a designation for future reference.

Expected SCAQMD Cost: The estimated proposed SCAQMD cost share as required by H&SC 40448.5.1.(a)(1).

Expected Total Cost: The estimated total project cost including the SCAQMD cost share and the cost share of outside organizations expected to be required to complete the proposed project. This is an indication of how much SCAQMD public funds are leveraged through its cooperative efforts.

Description of Technology and Application: A brief summary of the proposed technology to be developed and demonstrated, including the expected vehicles, equipment, fuels, or processes that could benefit.

Potential Air Quality Benefits: A brief discussion of the expected benefits of the proposed project, including the expected contribution towards meeting the goals of the AQMP, as required by H&SC 40448.5.1.(a)(1). In general, the most important benefits of any technology research, development and demonstration program are not necessarily realized in the near-term. Demonstration projects are generally intended to be proof-of-concept for an advanced technology in a real-world application. While emission benefits, for example, will be achieved from the demonstration, the true benefits will be seen over a longer term, as a successfully demonstrated technology is eventually commercialized and implemented on a wide scale.

Proposed Project	Expected SCAQMD Cost \$	Expected Total Cost \$
Electric/Hybrid Technologies & Infrastructure		
Demonstrate Light-Duty Plug-In Hybrid & Battery Electric Vehicles and	700,000	1,500,000

Table 7: Summary of Potential Projects for 2016

Demonstrate Light-Duty Plug-In Hybrid & Battery Electric Vehicles and Infrastructure	700,000	1,500,000
Develop and Demonstrate Medium- and Heavy-Duty Hybrid Vehicles and Infrastructure	2,000,000	6,000,000
Demonstrate Alternative Energy Storage	300,000	2,000,000
Develop and Demonstrate Electric Container Transport Technologies	2,000,000	6,000,000
Subtotal	\$5,000,000	\$15,500,000

Hydrogen and Fuel Cell Technologies and Infrastructure

Develop and Demonstrate Operation and Maintenance Business Case Strategies for Hydrogen Stations	350,000	4,000,000
Develop and Demonstrate Distributed Hydrogen Production and Fueling Stations	1,500,000	5,000,000
Develop and Demonstrate Medium- and Heavy-Duty Fuel Cell Vehicles	3,000,000	10,000,000
Demonstrate Light-Duty Fuel Cell Vehicles	100,000	100,000
Subtotal	\$4,950,000	\$19,100,000

Engine Systems

Develop and Demonstrate Advanced Alternative Fuel Medium- and Heavy-Duty Engines and Vehicles	1,500,000	3,000,000
Develop and Demonstrate Alternative Fuel and Clean Conventional Fueled Light-Duty Vehicles	200,000	1,500,000
Subtotal	\$1,700,000	\$4,500,000

Fueling Infrastructure and Deployment (NG/RNG)

Deploy Natural Gas Vehicles in Various Applications	500,000	2,000,000
Develop, Maintain & Expand Natural Gas Infrastructure	350,000	2,000,000
Demonstrate Natural Gas Manufacturing and Distribution Technologies Including Renewables	500,000	7,000,000
Subtotal	\$1,350,000	\$11,000,000

Fuels/Emission Studies

Conduct In-Use Emissions Studies for Advanced Technology Vehicle Demonstrations	300,000	800,000
Conduct Emissions Studies on Biofuels and Alternative Fuels	400,000	1,000,000

Table 7: Summary of Potential Projects for 2016 (cont'd)		
Proposed Project	Expected SCAQMD Cost \$	Expected Total Cost \$
Fuels/Emission Studies (cont'd)		
Identify and Demonstrate In-Use Fleet Emissions Reduction Technologies & Opportunities	250,000	2,000,000
Subtotal	\$950,000	\$3,800,000
Stationary Clean Fuel Technologies		
Develop and Demonstrate Reliable, Advanced Emission Control Technologies, and Low Emission Monitoring Systems and Test Methods	150,000	500,000
Develop and Demonstrate Clean Stationary Technologies	250,000	750,000
Develop and Demonstrate Renewables-Based Energy Generation Alternatives	200,000	1,000,000
Subtotal	\$600,000	\$2,250,000
Emission Control Technologies		
Develop and Demonstrate Advanced Aftertreatment Technologies	300,000	5,000,000
Demonstrate On-Road Technologies in Off-Road and Retrofit Applications	250,000	1,000,000
Subtotal	\$550,000	\$6,000,000
Health Impacts Studies		
Evaluate Ultrafine Particle Health Effects	150,000	2,000,000
Conduct Monitoring to Assess Environmental Impacts	150,000	500,000
Assess Sources and Health Impacts of Particulate Matter	150,000	300,000
Subtotal	\$450,000	\$2,800,000
Outreach and Technology Transfer		
Assess and Support Advanced Technologies and Disseminate Information	500,000	800,000
Support Implementation of Various Clean Fuels Vehicle Incentive Programs	400,000	400,000
Subtotal	\$900,000	\$1,200,000
TOTALS FOR POTENTIAL PROJECTS	\$16,400,000	\$66,150,000

Technical Summaries of Potential Projects

Electric/Hybrid Technologies & Infrastructure

 Proposed Project:
 Demonstrate Light-Duty Plug-In Hybrid & Battery Electric Vehicles and Infrastructure

Expected SCAQMD Cost: \$700,000

Expected Total Cost: \$1,500,000

Description of Technology and Application:

All of the major automobile manufacturers are currently developing and commercializing hybridelectric vehicles, which now come in a variety of fuel economy and performance options. These commercial hybrid EVs integrate a smaller internal combustion engine, battery pack and electric drive motors to improve fuel economy (e.g., Chevy Volt) or performance (e.g., Lexus RX400h).

The SCAQMD has long supported the concept of using increased battery power to allow a portion of the driving cycle to occur in all-electric mode for true zero emission miles. This battery dominant strategy is accomplished by incorporating an advanced battery pack initially recharged from the household grid or EV chargers. This "plug-in" hybrid EV strategy allows reduced emissions and improved fuel economy. In 2009, CARB adopted Plug-In Hybrid Electric Vehicle Test Procedure Amendments and Aftermarket Parts Certification and several automobile manufacturers have announced demonstration or early production plans of "blended" plug-in hybrid electric, extended-range electric vehicles (E-rEV), or highway capable battery electric vehicles (BEVs). Electric utilities refer to PHEVs, E-rEVs and BEVs as plug-in electric drive vehicles (PEVs) and are working with automakers to support PEVs. The recent adoption of revised recommended practice SAE J1772 enables passenger vehicles to charge from 110/120V AC (Level 1), 220/240V AC (Level 2), and faster 440/480V DC charging using a common conductive connector in 30 minutes or less in the U.S. and Europe. The impact of fast charging on battery life and infrastructure costs is not well understood and will be evolving as three fast DC systems (SAE combo, CHAdeMO and Tesla) compete for international market share.

Integrated programs can interconnect fleets of electric drive vehicles with mass transit via webbased reservation systems that allow multiple users. These integrated programs can match the features of EVs (zero emissions, zero start-up emissions, short range) to typical consumer demands for mobility in a way that significantly reduces emissions of pollutants and greenhouse gases.

Recently, automakers have commercialized fuel cell vehicles, with some concepts with plug-in charge capability. Development and demonstration of dual fuel, zero emission vehicles could expand the acceptance of battery electric vehicles and accelerate the introduction of fuel cells in vehicle propulsion.

The SCAQMD has long been a leader in promoting early demonstrations of next generation lightduty vehicle propulsion technologies (and fuels). However, given the current and planned market offerings in this category, priorities have shifted. Nevertheless, the SCAQMD will continue to evaluate market offerings and proposed technologies in light-duty vehicles to determine if any future support is required.

This project category is to develop and demonstrate: 1) various PEV architectures; 2) anticipated costs for such architectures; 3) customer interest and preferences for each alternative; 4) prospective commercialization issues and strategies for various alternatives; 5) integration of the technologies into prototype vehicles and fleets; 6) infrastructure (especially in conjunction with

the DOE, CEC and local utilities) to demonstrate the potential clean air benefits of these types of vehicles; 7) support for local government outreach and charging installation permit streamlining; and 8) evaluation of any new promising light-duty vehicle propulsion technologies or fuels.

Potential Air Quality Benefits:

The preliminary 2016 AQMP identifies zero or near-zero emitting vehicles as a key attainment strategy. Plug-in HEV technologies have the potential to achieve near-zero emissions while retaining the range capabilities of a conventionally gasoline-fueled combustion engine vehicle, a key factor expected to enhance broad consumer acceptance. Given the variety of PEV systems under development, it is critical to determine the true emissions and performance utility compared to conventional vehicles. Successful demonstration of optimized prototypes would promise to enhance the deployment of near-ZEV and ZEV technologies.

Expected benefits include the establishment of criteria for emissions evaluations, performance requirements, customer acceptability of the technology, etc. This will help both regulatory agencies and OEMs to expedite introduction of zero and near-zero emitting vehicles in the South Coast Basin, which is a high priority of the AQMP.

Proposed Project: Develop and Demonstrate Medium- and Heavy-Duty Hybrid Vehicles and Infrastructure

Expected SCAQMD Cost: \$2,000,000

Expected Total Cost: \$6,000,000

Description of Technology and Application:

Hybrid technologies have gained momentum in the light-duty sector with commercial offerings by most of the automobile manufacturers. Unfortunately, the medium- and heavy-duty platforms are where most emissions reductions are required, especially for the in-use fleet due to low turnover. This project category is to investigate the use of hybrid technologies to achieve similar performance as the conventional fueled counterparts while achieving both reduced emissions and improved fuel economy. Development and validation of emission test procedures is needed, but is complicated due to the low volume and variety of medium- and heavy-duty vehicles.

Platforms to be considered include utility trucks, delivery vans, shuttle buses, transit buses, waste haulers, construction equipment, cranes and other off-road vehicles. Innovations that may be considered for demonstration include: advancements in the auxiliary power unit, either ICE or other heat engine; battery-dominant hybrid systems utilizing off-peak re-charging, with advanced battery technologies such as lithium-ion; and hydraulic energy storage technologies where applicable. Alternative fuels are preferred in these projects, e.g., natural gas, especially from renewable sources, LPG, hydrogen, GTL and hydrogen-natural gas blends, but conventional fuels such as gasoline, clean diesel, or even biodiesel may be considered if the emissions benefits can be demonstrated as equivalent or superior to alternative fuels. Both new designs and retrofit technologies and related charging infrastructure will be considered.

Federal Recovery Act funding combined with state and local support has accelerated the development and demonstration of medium-duty plug-in hybrid electric truck platforms. Analysis of project data and use profiles will help optimize drive systems, target applications for early commercialization and fill gaps in product offerings.

Potential Air Quality Benefits:

The preliminary 2016 AQMP identifies zero- or near-zero emitting vehicles as a key attainment strategy. Hybrid technologies have the potential to redirect previously wasted kinetic energy into useable vehicle power. This proposed project category will evaluate various hybrid systems and fuel combinations to identify their performance and emissions benefits. Given the variety of hybrid systems under development, it is critical to determine the true emissions and performance of these prototypes, especially if both emissions and fuel economy advantages are achieved.

Expected benefits include the establishment of criteria for emissions evaluations, performance requirements and customer acceptability of the technology. This will help both regulatory agencies and OEMs to expedite introduction of near-zero emitting vehicles in the South Coast Basin, which is a high priority of the AQMP.

Proposed Project: <u>Demonstrate Alternative Energy Storage</u>

Expected SCAQMD Cost: \$300,000

Expected Total Cost: \$2,000,000

Description of Technology and Application:

The SCAQMD has been involved in the development and demonstration of energy storage systems for electric and hybrid-electric vehicles, mainly Lithium ion chemistry battery packs. Over the past few years, additional technology consisting of nickel sodium chloride, lithium-ion and lithium iron phosphate batteries have shown robust performance. Other technology manufacturers have also developed energy storage devices including flywheels, hydraulic systems and ultracapacitors. Energy storage systems optimized to combine the advantages of ultracapacitors and high-energy but low-power advanced batteries could yield further benefits. This project category is to apply these advanced storage technologies in vehicle platforms to identify best fit applications, demonstrate their viability (reliability, maintainability and durability), gauge market preparedness and provide a pathway to commercialization.

The long-term objective of this project is to decrease fuel consumption and resulting emissions without any changes in performance compared to conventional vehicles. This project will support several projects for development and demonstration of different types of low emission hybrid vehicles using advanced energy strategies and conventional or alternative fuels. The overall net emissions and fuel consumption of these types of vehicles are expected to be much lower than traditional engine systems. Both new and retrofit technologies will be considered.

Potential Air Quality Benefits:

Certification of low emission vehicles and engines and their integration into the Basin's transportation sector is a high priority under the preliminary 2016 AQMP. This project is expected to develop alternative energy storage technologies that could be implemented in medium- and heavy-duty trucks, buses and other applications. Benefits will include proof of concept for the new technologies, diversification of transportation fuels and lower emissions of criteria, toxic pollutants and greenhouse gases.

Proposed Project: Develop and Demonstrate Electric Container Transport Technologies

Expected SCAQMD Cost: \$2,000,000

Expected Total Cost: \$6,000,000

Description of Technology and Application:

Advanced transportation systems can be used to transfer cargo containers from ports to both local and "distant" intermodal facilities, thereby significantly reducing emissions from on-road trucks and locomotives and also reducing traffic congestion in local transportation corridors. Such systems could be stand-alone systems that use magnetic levitation (maglev), linear synchronous motors or linear induction motors on dedicated guideways. A more near-term design could use existing roadways that are electrified with catenary electric lines or linear electric motors to move containers on modified trucks equipped to run on electricity. In both scenarios, containers are transported relatively quietly and without direct emissions. The footprints for such systems are similar to conventional rail systems but have reduced impact on adjacent property owners including noise and fugitive dust. These systems can even be built above or adjacent to freeways or on elevated guideways, where the over-the-roadway system may require the operator to actively control the transport of the containers.

One of the container transportation concepts the SCAQMD is actively pursuing is the eHighway catenary hybrid truck system by Siemens Mobility. Siemens and their partners have developed a catenary system and hybrid electric trucks to utilize the catenary for zero emission transport of containers. The hybrid drive system will extend the operating range of the truck beyond the allelectric range of the catenary system, thus enabling the truck to perform regional drayage operations and bridge gaps in catenary infrastructure as it is deployed on a regional level. The proposed Siemens pantograph system will allow for seamless connection and disconnection from the catenary wires. When entering the catenary system corridor, the pantograph system will verify the presence of catenary lines and allow the driver to raise the pantograph from within the cab of the truck. Upon leaving the catenary system, the pantograph automatically retracts and the truck switches to on-board power systems. The on-board power systems could be a range of technologies, including batteries, fuel cells, or internal combustion engines. In addition, SCAQMD is administering a project to develop and demonstrate zero emission drayage trucks for goods movement operations, consisting of three different battery electric truck technologies and a fuel cell hybrid electric truck platform. This project is funded by a \$4.2 million award from Department of Energy to promote the deployment of zero emission cargo transport technologies. These trucks can be also upfitted to connect to wayside power via a catenary or LSM system in the future. Recently, CARB awarded SCAQMD more than \$23 million towards the development, demonstration and deployment of up to 43 trucks for goods movement, either with all electric operation or all electric range within disadvantaged communities. The total project cost is approximately \$40 million, with the remainder funds cost-shared between five sister air quality agencies, OEMs and demonstration sites.

In addition to these technologies, there are other options for electric container applications such as dual-mode locomotives, hybrid electric technologies with battery storage, a battery tender car, magnetic levitation, fuel cell propulsion systems and other wayside power alternatives. This project will evaluate all available technology options to determine whether their systems can be successfully developed and deployed, financially viable, and reliably operated on a long-term basis.

Potential Air Quality Benefits:

On-road heavy-duty diesel truck travel is an integral part of operations at the ports moving cargo containers into the Basin and beyond. The preliminary 2016 AQMP proposes to reduce emissions from this activity by modernizing the fleet and retrofitting NOx and PM emission controls on older trucks. An alternative approach, especially for local drayage to the nearby intermodal facilities, is to use advanced container transport systems that use electric propulsion for the containers on fixed guideways or modified trucks able to operate on electricity which will eliminate local diesel truck emissions. The emission benefits have not yet been estimated because the fate of the displaced trucks has not been determined.

Hydrogen and Fuel Cell Technologies & Infrastructure

Proposed Project: Develop and Demonstrate Operation and Maintenance Business Case Strategies for Hydrogen Stations

Expected SCAQMD Cost: \$350,000

Expected Total Cost: \$4,000,000

Description of Technology and Application:

California regulations require automakers to place increasing numbers of zero emission vehicles into service every year. By 2050, CARB projects that 87% of light-duty vehicles on the road will be zero emission battery and fuel cell vehicles with fuel cell electric becoming the dominant powertrain.

In 2013, cash-flow analysis resulting in a Hydrogen Network Investment Plan and fuel cell vehicle development partnership announcements by major automakers enabled the passage of AB 8 which provides \$20 million per year for hydrogen infrastructure cofunding through the CEC. This resulted in limited fuel cell vehicle production announcements by Hyundai, Toyota and Honda for 2014-2015.

In mid-2014 the CaFCP published the *Hydrogen Progress, Priorities and Opportunities* (HyPPO) report, an update of their roadmap describing the first network of commercial hydrogen stations in California.

In 2015, Hyundai and Toyota commercialized fuel cell vehicles, with Honda and other OEMs to initiate delivery in 2016.

Additional work in this project category would develop a plan to secure long-term funding to complete the hydrogen fueling network build-out, provide details how funding can be invested, assess alternative revenue streams such as renewable incentives, propose alternative financing structures to leverage/extend CEC funding, and support station operation during the transition to commercial viability, including optimizing designs with flexibility to address individual site characteristics, as well as ensuring higher levels of dispensing availability and reliability.Furthermore, in the next couple of years an evaluation of actual market penetration of FCVs should be conducted to guide and protect local and state investments in the hydrogen market.

Potential Air Quality Benefits:

The preliminary 2016 AQMP identifies the use of alternative fuels and zero emission transportation technologies as necessary to meet federal air quality standards. One of the major advantages of Fuel Cell vehicles (FCEVs) is the fact that they use hydrogen, a fuel that can be domestically produced from a variety of resources such as natural gas, electricity (stationary turbine technology, solar or wind) and biomass. The technology and means to produce hydrogen fuel to support FCEVs are available now. The deployment of large numbers of FCEVs, which is an important strategy to attain air quality goals, requires a well-planned and robust hydrogen fueling infrastructure. This SCAQMD project with additional funding from other entities will provide the hydrogen fueling infrastructure that is necessary in the South Coast Air Basin. The deployment of FCEVs and the development of the necessary fueling infrastructure will lead to substantial reductions in NOx, VOC, CO, PM and toxic air contaminants from vehicles.

Proposed Project: Develop and Demonstrate Distributed Hydrogen Production and Fueling Stations

Expected SCAQMD Cost: \$1,500,000

Expected Total Cost: \$5,000,000

Description of Technology and Application:

Alternative fuels, such as hydrogen and the use of advanced technologies, such as fuel cell vehicles, are necessary to meet future clean air standards. A key element in the widespread acceptance and resulting increased use of alternative fuel vehicles is the development of a reliable and robust infrastructure to support the refueling of vehicles, cost-effective production and distribution and clean utilization of these new fuels.

A major challenge to the entry and acceptance of direct-hydrogen fuel cell vehicles is the limited number of hydrogen refueling sites. This project would support the development and demonstration of hydrogen refueling technologies. Proposed projects would address:

- *Fleet and Commercial Refueling Stations:* Further expansion of the hydrogen fueling network based on retail models, providing renewable generation, adoption of standardized measurements for hydrogen refueling, other strategic refueling locations and increased dispensing pressure of 10,000 psi and compatibility with existing CNG stations may be considered.
- *Energy Stations*: Multiple-use energy stations that can produce hydrogen for fuel cell vehicles or for stationary power generation are considered an enabling technology with the potential for costs competitive with large-scale reforming. System efficiency, emissions, hydrogen throughput, hydrogen purity and system economics will be monitored to determine the viability of this strategy for hydrogen fueling infrastructure deployment and as a means to produce power and hydrogen from renewable feedstocks (biomass, digester gas, etc.).

Home Refueling Appliances: Home refueling/recharging is an attractive advancement for alternative clean fuels due to the limited conventional refueling infrastructure. This project would evaluate a hydrogen home refueler for cost, compactness, performance, durability, emission characteristics, ease of assembly and disassembly, maintenance and operations. Other issues such as building permits, building code compliance and UL ratings for safety would also be evaluated. It is estimated that approximately 50,000 fuel cell vehicles will be deployed by 2017 in California and the majority of these vehicles will be in the South Coast Air Basin. To provide fuel for these vehicles, the hydrogen fueling infrastructure needs to be significantly increased and become more reliable in terms of availability. SCAQMD will seek additional funding from CEC and CARB to construct and operate hydrogen fueling stations.

Potential Air Quality Benefits:

The preliminary 2016 AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy. Pursuant to AQMP goals, the SCAQMD has in effect several fleet rules that require public and certain private fleets to purchase clean-burning alternative-fueled vehicles when adding or replacing vehicles to their vehicle fleets. Fuel cell vehicles constitute the cleanest alternative-fuel vehicles today. Since hydrogen is a key fuel for fuel cell vehicles, this project would address some of the barriers faced by hydrogen as a fuel and thus assist in accelerating its acceptance and ultimate commercialization. In addition to supporting the immediate deployment of the demonstration fleet, expanding the hydrogen fuel infrastructure should contribute to the

market acceptance of fuel cell technologies in the long run, leading to substantial reductions in NOx, VOC, CO, PM and toxic compound emissions from vehicles.

Proposed Project: Develop and Demonstrate Medium- and Heavy-Duty Fuel Cell Vehicles

Expected SCAQMD Cost: \$3,000,000

Expected Total Cost: \$10,000,000

Description of Technology and Application:

This proposed project would support evaluation including demonstration of promising fuel cell technologies for applications using direct hydrogen with proton exchange membrane (PEM) fuel cell technology. Battery dominant fuel cell hybrids are another potential technology being mentioned by battery experts as a way of reducing costs and enhancing performance of fuel cell vehicles.

The California ZEV Action Plan specifies actions to help deploy an increasing number of zero emission vehicles, including medium- and heavy-duty ZEVs. Fleets are useful demonstration sites because economies of scale exist in central refueling, in training skilled personnel to operate and maintain the vehicles, in the ability to monitor and collect data on vehicle performance and for manufacturer technical and customer support. In some cases, medium- and heavy-duty fuel cell vehicles could leverage the growing network of hydrogen stations, providing an early base load of fuel consumption until the number of passenger vehicles grows. These vehicles could include hybrid-electric vehicles powered by fuel cells and equipped with batteries capable of being charged from the grid and even supplying power to the grid.

In 2012 SCAQMD launched demonstrations of Zero Emission Container Transport (ZECT) technologies. In 2015 staff launched ZECT II to develop and demonstrate additional fuel cell truck platforms and vehicles.

This category may include projects in the following applications:

On-Road:

- Transit Buses
- Shuttle Buses
- Medium- & Heavy-Duty Trucks

Off-Road:

- Vehicle Auxiliary Power Units
- Construction Equipment
- Lawn and Garden Equipment
- Cargo Handling Equipment

Potential Air Quality Benefits:

The preliminary 2016 AQMP identifies the need to implement zero emission vehicles. SCAQMD adopted fleet regulations require public and some private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. In the future, such vehicles could be powered by zero emission fuel cells operating on hydrogen fuel. The proposed projects have the potential to accelerate the commercial viability of fuel cell vehicles. Expected immediate benefits include the establishment of zero- and near-zero emission proof-of-concept vehicles in numerous applications. Over the longer term, the proposed projects could help foster wide-scale implementation of zero emission fuel cell vehicles in the Basin. The proposed projects could also lead to significant fuel economy improvements, manufacturing innovations and the creation of high-tech jobs in Southern California, besides realizing the air quality benefits projected in the AQMP.

Proposed Project: Demonstrate Light-Duty Fuel Cell Vehicles

Expected SCAQMD Cost: \$100,000

Expected Total Cost: \$100,000

Description of Technology and Application:

This proposed project would support the demonstration of limited production and early commercial fuel cell passenger vehicles using gaseous hydrogen with proton exchange membrane (PEM) fuel cell technology. Recent designs of light-duty fuel cell vehicles include hybrid batteries to recapture regenerative braking and improve overall system efficiency.

With the implementation of the California ZEV Action Plan, supplemented by the existing and planned hydrogen refueling stations in the Southern California area, light-duty fuel cell limited-production vehicles are planned for retail deployment in early commercial markets near hydrogen stations by several automakers. Fleets are useful demonstration sites because economies of scale exist in central refueling, in training skilled personnel to operate and maintain the vehicles, in the ability to monitor and collect data on vehicle performance and for manufacturer technical and customer support. SCAQMD has included fuel cell vehicles as part of its demonstration fleet since our first hydrogen station began operation in 2005; strengthening support, education, and outreach regarding fuel cell vehicle technology on an on-going basis. In addition, demonstration vehicles could include hybrid-electric vehicles powered by fuel cells and equipped with larger batteries capable of being charged from the grid and even supplying power to the grid.

Potential Air Quality Benefits:

The preliminary 2016 AQMP identifies the need to implement zero emission vehicles. SCAQMD adopted fleet regulations require public and some private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. In the future, such vehicles could be powered by zero emission fuel cells operating on hydrogen fuel. The proposed projects have the potential to accelerate the commercial viability of fuel cell vehicles. Expected immediate benefits include the deployment of zero- emission vehicles in SCAQMD's demonstration fleet. Over the longer term, the proposed projects could help foster wide-scale implementation of zero emission fuel cell vehicles in the Basin. The proposed projects could also lead to significant fuel economy improvements, manufacturing innovations and the creation of high-tech jobs in Southern California, besides realizing the air quality benefits projected in the AQMP.

Engine Systems

 Proposed Project:
 Develop and Demonstrate Advanced Alternative Fuel Medium- and Heavy-Duty Engines and Vehicles

Expected SCAQMD Cost: \$1,500,000

Expected Total Cost: \$3,000,000

Description of Technology and Application:

The objective of this proposed project is to support development and certification of near commercial prototype low-emission heavy-duty alternative fuel engine technologies and demonstration of these technologies in on-road vehicles. The NOx emissions target for this project area is 0.02 g/bhp-hr and lower and the PM emissions target is below 0.01 g/bhp-hr. To achieve these targets, an effective emission control strategy must employ advance fuel or alternative fuels, engine design features, improved exhaust or recirculation systems, and aftertreatment devices that are optimized using a system approach. This project is expected to result in several projects, including:

- demonstration of advanced engines in medium- and heavy-duty vehicles and high horsepower applications;
- development of durable and reliable retrofit technologies to partially or fully convert engines and vehicles from petroleum fuels to alternative fuels; and
- anticipated fuels for these projects include but are not limited to CNG, LNG, LPG, emulsified diesel and GTL fuels. The project proposes to expand field demonstration of these advanced technologies in various vehicle fleets operating with different classes of vehicles.

The use of alternative fuel in heavy-duty trucking applications has been demonstrated in certain local fleets within the Basin. These vehicles typically require 200-300 horsepower engines. Higher horsepower alternative fuel engines are beginning to be introduced. However, vehicle range, lack of experience with alternative fuel engine technologies and limited selection of appropriate alternative fuel engine products have made it difficult for more firms to consider significant use of alternative fuel vehicles. For example, in recent years, several large trucking fleets have expressed interest in using alternative fuels. However, at this time the choice of engines over 350 HP or more is limited. Continued development of cleaner dedicated natural gas or other alternative fuel engines such as natural gas-hydrogen blends over 350 HP would increase availability to end-users and provide additional emission reductions.

Potential Air Quality Benefits:

This project is intended to expedite the commercialization of low-emission alternative fuel heavyduty engine technology in California, both in the Basin and in intrastate operation. The emission reduction benefit of replacing one 4.0 g/bhp-hr heavy-duty engine with a 0.2 g/bhp-hr engine in a vehicle that consumes 10,000 gallons of fuel per year is about 1,400 lb/yr of NOx. Clean alternative fuels, such as natural gas, or natural gas blends with hydrogen can also reduce heavyduty engine particulate emissions by over 90 percent compared to current diesel technology. This project is expected to lead to increased availability of low-emission alternative fuel heavy-duty engines. Fleets can use the engines and vehicles emerging from this project to comply with SCAQMD fleet regulations.

Proposed Project: Develop and Demonstrate Alternative Fuel and Clean Conventional Fueled Light-Duty Vehicles

Expected SCAQMD Cost: \$200,000

Expected Total Cost: \$1,500,000

Description of Technology and Application:

Although new conventionally fueled vehicles are much cleaner than their predecessors, not all match the lowest emissions standards often achieved by alternative fuel vehicles. This project would assist in the development, demonstration and certification of both alternative-fueled and conventional-fueled vehicles to meet the strictest emissions requirements by the state, e.g., SULEV for light-duty vehicles. The candidate fuels include CNG, LPG, ethanol, GTL, clean diesel, bio-diesel and ultra low-sulfur diesel, and compressed air technologies. The potential vehicle projects may include:

- certification of CNG light-duty sedans and pickup trucks used in fleet services;
- resolution of higher concentration ethanol (E-85) affect on vehicle fueling system ("permeation issue");
- certification of E85 vehicles to SULEV standards;
- assessment of "clean diesel" vehicles, including hybrids and their ability to attain SULEV standards; and
- assessment of compressed air technologies.

Other fuel and technology combinations may also be considered under this category.

Potential Air Quality Benefits:

The preliminary 2016 AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy. Pursuant to AQMP goals, the SCAQMD has in effect several fleet rules that require public and certain private fleets to purchase clean-burning alternative-fueled vehicles when adding or replacing vehicles to their vehicle fleets. This project is expected to lead to increased availability of low emission alternative-and conventional-fueled vehicles for fleets as well as consumer purchase.

Fueling Infrastructure and Deployment (NG/RNG)

Proposed Project:Deploy Natural Gas Vehicles in Various ApplicationsExpected SCAQMD Cost:\$500,000Expected Total Cost:\$2,000,000

Description of Technology and Application:

Natural gas vehicles (NGVs) have been very successful in reducing emissions in the South Coast Air Basin due to the deployment of fleets and heavy-duty vehicles utilizing this clean fuel. In order to maintain the throughput, utility and commercial potential of the natural gas infrastructure and the corresponding clean air benefits, deploying additional models of NGVs in existing applications are needed. This technology category seeks to support the implementation of early-commercial vehicles in a wide variety of applications, such as taxis, law enforcement vehicles, shuttle buses, delivery vans, transit buses, waste haulers, class 8 tractors and off-road equipment such as construction vehicles and yard hostlers. It also seeks to deploy low-emission natural gas vehicles using renewable fuels to achieve further emission reductions.

Potential Air Quality Benefits:

Natural gas vehicles have inherently lower engine criteria pollutant emissions than conventional vehicles, especially in the heavy-duty applications where older diesel engines are being replaced. Incentivizing these vehicles in city fleets, goods movement applications and transit bus routes help to reduce the local emissions and exposure to nearby residents. Natural gas vehicles also can have lower greenhouse gas emissions and increase energy diversity depending on the feedstock and vehicle class. Deployment of additional NGVs is in agreement with SCAQMD's AQMP as well as the state's Alternative Fuels Plan as part of AB 1007 (Pavley).

Proposed Project: Develop, Maintain & Expand Natural Gas Infrastructure

Expected SCAQMD Cost: \$350,000

Expected Total Cost: \$2,000,000

Description of Technology and Application:

This project supports the development, maintenance and expansion of natural gas fueling station technologies and incorporate advancing concepts to increase the overall number of such fueling stations in strategic locations throughout the Basin including the Ports, reduce the cost of natural gas equipment, develop and demonstrate closed loop systems for dispensing and storage, standardize fueling station design and construction and help with the implementation of SCAQMD's fleet rules. As natural gas fueling equipment begins to age or has been placed in demanding usage, components begin to age and deteriorate. This project offers an incentive to facilities to replace worn-out equipment or to upgrade existing fueling and/or garage and maintenance equipment to offer increased fueling capacity to public agencies, private fleets and school districts.

Potential Air Quality Benefits:

The AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy. NGVs have significantly lower emissions than gasoline vehicles and represent the cleanest internal combustion engine powered vehicles available today. The project has the potential to significantly reduce the installation and operating costs of NGV refueling stations, besides improving the refueling time. While new or improved NGV stations have an indirect emissions reduction benefit, they help facilitate the introduction of low emission, NGVs in private and public fleets in the area, which have a direct emissions reduction benefit. The increased exposure and fleet and consumer acceptance of NGVs would lead to significant and direct reductions in NOx, VOC, CO, PM and toxic compound emissions from mobile sources. Such increased penetration of NGVs will provide direct emissions reductions of NOx, VOC, CO, PM and air toxic compounds throughout the Basin.

Proposed Project:	Demonstrate Natural Gas Manufacturing and Distribution Technologies
	Including Renewables

Expected SCAQMD Cost: \$500,000

Expected Total Cost: \$7,000,000

Description of Technology and Application:

Lack of sufficient statewide LNG production results in increased fuel costs and supply constraints. The cost of transporting LNG from production facilities out-of-state increases the fuel cost anywhere from 15 to 20 cents per gallon of LNG and subjects users to the reliability of a single supply source. High capital costs prevent construction of closer, large scale liquefaction facilities. Small-scale, distributed LNG liquefaction systems may provide 25 percent lower capital costs than conventional technology per gallon of LNG produced. Because these smaller plants can be sited near fleet customers, costs for transporting the LNG to end users are much lower than those for remote larger plants. Beyond these cost reductions, the smaller plants offer key benefits of much smaller initial capital investment and wider network of supply than the larger plant model. Renewable feed stocks including landfill gas, green waste and waste gases can be processed to yield LNG or CNG.

Industry and government agree that LNG promises to capture a significant share of the heavyduty vehicle and engine market. LNG is preferred for long distance trucking as it provides twice the energy per unit volume as CNG. This translates to longer driving ranges and lower-weight vehicle fuel storage.

The main objectives of this project are to investigate, develop and demonstrate:

- commercially viable methods for converting renewable feed stocks into CNG or LNG (e.g., production from biomass);
- economic small-scale natural gas liquefaction technologies;
- utilization of various gaseous feed stocks locally available;
- commercialize incentives for fleets to site, install and use LNG and L/CNG refueling facilities; and
- strategic placement of LNG storage capacity sufficient to provide supply to users in the event of a production outage.

Potential Air Quality Benefits:

The SCAQMD relies on a significant increase in the penetration of zero- and low-emission vehicles in the South Coast Basin to attain federal clean air standards by 2014, 2023 and 2032. This project would help develop a number of small-scale liquefaction technologies that can reduce LNG costs to be competitive with diesel fuel. Such advances are expected to lead to greater infrastructure development. This would make LNG fueled heavy-duty vehicles more available to the commercial market leading to direct reductions in NOx, PM and toxic compound emissions.

Fuels/Emission Studies

Proposed Project:	Conduct In-Use Emissions Studies for Advanced Technology Vehicle
	Demonstrations

Expected SCAQMD Cost:	\$300,000
Expected Total Cost:	\$800,000

Description of Technology and Application:

Hybrid electric, hybrid hydraulic, plug-in electric hybrid and pure EVs will all play a unique role in the future of transportation. Each of these transportation technologies has attributes that could provide unique benefits to different transportation sectors. Identifying the optimal placement of each transportation technology will provide the co-benefits of maximizing the environmental benefit and return on investment for the operator.

The environmental benefit for each technology class will be highly duty-cycle and application specific. Identifying the attributes of a specific application or drive cycle that would take best advantage of a specific transportation technology would speed the adoption and make optimal use of financial resources in the demonstration and deployment of a technology. The adoption rates would be accelerated since the intelligent deployment of a certain technology would ensure that a high percentage of the demonstration vehicles showed positive results. These positive results would spur the adoption of this technology in similar applications, as opposed to negative results derailing the further development or deployment of a certain technology.

The proposed project would conduct a characterization of application specific drive cycles to best match different transportation technologies to specific applications. The potential emissions reductions and fossil fuel displacement for each technology in a specific application would be quantified on a full-cycle basis. This information could be used to develop a theoretical database of potential environmental benefits of different transportation technologies when deployed in specific applications.

Another proposed project would be the characterization of intermediate volatility organic compound (IVOC) emissions which is critical in assessing ozone and SOA precursor production rates. Diesel vehicle exhaust and unburned diesel fuel are major sources of and contribute to the formation of urban ozone and secondary organic aerosol (SOA), which is an important component of PM2.5.

Finally, while early developments in autonomous and vehicle-to-vehicle controls are focused on light-duty passenger vehicles, the early application of this technology to heavy-duty, drayage and container transport technologies is more likely. The impact on efficiency and emissions could be substantial. A project to examine this technology to assess its effect on goods movement and emissions associated with goods movement could be beneficial at this time.

Potential Air Quality Benefits:

The development of an emissions reduction database, for various application specific transportation technologies, would assist in the targeted deployment of new transportation technologies. This database coupled with application specific vehicle miles traveled and population data would assist in intelligently deploying advanced technology vehicles to attain the maximum environmental benefit. These two data streams would allow vehicle technologies to be matched to an application that is best suited to the specific technology, as well as selecting applications that are substantial enough to provide a significant environmental benefit. The demonstration of a quantifiable reduction in operating cost through the intelligent deployment of

vehicles will also accelerate the commercial adoption of the various technologies. The accelerated adoption of lower emitting vehicles will further assist in attaining SCAQMD's air quality goals.

Proposed Project: <u>Conduct Emissions Studies on Biofuels and Alternative Fuels</u>

Expected SCAQMD Cost: \$400,000

Expected Total Cost: \$1,000,000

Description of Technology and Application:

The use of biofuels can be an important strategy to reduce petroleum dependency, air pollution and greenhouse gas emissions. Biofuels are in fact receiving increased attention due to national support and state activities resulting from AB 32, AB 1007 and the Low-Carbon Fuel Standard. It's noteworthy to mention that in 2013 the Low-Carbon Fuel Standard was upheld by the U.S. Court of Appeals for the Ninth Circuit and subsequently in June 2014 opponents were denied further appeal by the Supreme Court. With an anticipated increase in biofuel use, it is the objective of this project to further analyze these fuels to better understand their benefits and impacts not only on greenhouse gases but also on air pollution and associated health effects.

In various diesel engine studies, replacement of petroleum diesel fuel with biodiesel fuel has demonstrated reduced PM, CO and air toxics emissions. Biodiesel also has the potential to reduce greenhouse gas emissions because it can be made from renewable feedstocks, such as soy and canola. However, certain blends of biodiesel have a tendency to increase NOx emissions, which exacerbates the ozone and PM2.5 challenges faced in the Basin. In addition, despite recent advancements in toxicological research in the air pollution field, the relationship between biodiesel particle composition and associated health effects is still not completely understood.

Ethanol is another biofuel that is gaining increased national media and state regulatory attention. CARB has recently amended the reformulated gasoline regulation to further increase the ethanol content to 10% as a means to increase the amount of renewable fuels in the state. It is projected that the state's ethanol use will increase from 900 million gallons in 2007 to 1.5 billion gallons by 2012 as a result. As in the case of biodiesel, ethanol has demonstrated in various emission studies to reduce PM, CO and toxic emissions; however, the relationship between particle composition and associated health effects from the combustion of ethanol is not well understood either.

DME is another fuel which requires evaluation of in-use emissions, especially NOx, in light of Volvo's announcement in 2015 that they will commercialize class 8 trucks using DME in the near future. Furthermore, CARB recently proposed a regulation on the commercialization of alternative diesel fuels, including biodiesel and renewable diesel, while noting that biodiesel in older heavy-duty vehicles can increase NOx and the need for emerging alternative diesel fuels to have clear ground rules for commercialization. The impact of natural gas fuel composition on emissions from heavy-duty trucks and transit buses is also being studied.

In order to address these concerns on potential health effects associated with biofuels, namely biodiesel and ethanol blends, this project will investigate the physical and chemical composition and associated health effects of tailpipe PM emissions from light- to heavy-duty vehicles burning biofuels in order to ensure public health is not adversely impacted by broader use of these fuels. This project also supports future studies to identify mitigation measures to reduce NOx emissions for biofuels. Additionally, a study of emissions from well-to-wheel for the extraction and use of shale gas might be considered.

Potential Air Quality Benefits:

If biodiesel and biodiesel blends can be demonstrated to reduce air pollutant emissions with the ability to mitigate any NOx impact, this technology will become a viable strategy to assist in meeting air pollutant standards as well as the goals of AB 32 and the Low-Carbon Fuel Standard. The use of biodiesel is an important effort for a sustainable energy future. Emission studies are

critical to understanding the emission benefits and any tradeoffs (NOx impact) that may result from using this alternative fuel. With reliable information on the emissions from using biodiesel and biodiesel blends, the SCAQMD can take actions to ensure the use of biodiesel will obtain air pollutant reductions without creating additional NOx emissions that may exacerbate the Basin's ozone problem.

Proposed Project: Identify and Demonstrate In-Use Fleet Emissions Reduction Technologies and Opportunities

Expected SCAQMD Cost: \$250,000

Expected Total Cost: \$2,000,000

Description of Technology and Application:

New technologies, such as alternative fueled heavy-duty engines, are extremely effective at reducing emissions because they are designed to meet the most stringent emissions standards while maintaining vehicle performance. In addition, many new vehicles are now equipped with telematics enabling motorists to obtain transportation information such as road conditions to avoid excessive idling and track information about the vehicle maintenance needs, repair history, tire pressure and fuel economy. Telematics have been shown to reduce emissions from new vehicles. Unfortunately, the in-use fleet lacks telematic systems--particularly heavy-duty engines in trucks, buses, construction equipment, locomotives, marine vessels and cargo handling equipment--have fairly long working lifetimes (up to 20 years due to remanufacturing in some cases). Even light-duty vehicles routinely have lifetimes exceeding 200,000 miles and 10 years. And it is the in-use fleet, especially the oldest vehicles, which are responsible for the majority of emissions.

This project category is to investigate near-term emissions control technologies which can be economically applied to reduce emissions from the in-use fleet. The first part of the project is to identify and conduct proof-of-concept demonstrations of feasible candidate technologies, such as:

- remote sensing for heavy-duty vehicles;
- annual testing for high mileage vehicles (>100,000 miles);
- replace or upgrade emissions control systems at 100,000 mile intervals;
- on-board emission diagnostics with remote notification;
- low-cost test equipment for monitoring and identifying high emitters;
- test cycle development for different class vehicles (e.g. four wheel drive SUVs);
- electrical auxiliary power unit replacements; and
- development, deployment and demonstration of smart vehicle telematic systems

The second phase of the project is to validate the technology or strategy on a larger demonstration project over a longer period of time.

An effort to be launched in 2016 will be a first-in-the-nation demonstration of advanced optical remote sensing technologies to better assess and measure emissions from refineries, ships and other sources. These demonstration projects will help measure emissions at lower levels and in near real-time than previously possible, helping enhance future air quality modeling and decision-making. This effort will involve three projects to quantify fugitive emissions from large refineries and other sources of VOCs, such as gas stations, oil wells, marine vessels and rail yards.

Potential Air Quality Benefits:

Many of the technologies identified can be applied to light-duty and heavy-duty vehicles to identify and subsequently remedy high-emitting vehicles in the current fleet inventory. Estimates suggest that 5 percent of existing fleets account for up to 80 percent of the emissions. Identification of higher emitting vehicles would assist with demand-side strategies, where higher emitting vehicles have correspondingly higher registration charges.

Stationary Clean Fuel Technologies

Proposed Project:	Develop ar	nd Demonstrate Reliable, Advanced Emission Control
	Technolog	ies, and Low-Emission Monitoring Systems and Test Methods
Expected SCAQMD	Cost:	\$150,000

Expected Total Cost: \$500,000

Description of Technology and Application:

Currently, the inability of air/fuel ratio control (AFRC) systems to keep rich-burn engines in compliance contributes significantly to air pollution in the basin. Reliable, low-cost emission monitoring systems are needed for small-to-intermediate size combustion devices, including stationary engines, boilers, heaters, furnaces and ovens that are not large enough to justify a continuous emission monitoring system (CEMS). This class of combustion device is often permitted on the basis of a single demonstration or periodic demonstrations of NOx and CO emissions meeting SCAQMD rule requirements or a RECLAIM concentration limit. However, SCAQMD-unannounced tests on engines and boilers have found that in many cases NOx and/or CO levels have increased significantly above levels that have been initially or periodically demonstrated due to equipment malfunction and/or inadequate operator attention. It is suspected that the same may be true of heaters, furnaces and ovens.

A recent demonstration project funded in part by the SCAQMD consisted of retrofitting a biogas engine with a digester gas clean up system and catalytic oxidizer at the exhaust followed by SCR which resulted in significant reductions of NO_x , VOC and CO. Based on the successful deployment of this project, further emission reductions may be achieved by other biogas combustion sources such as gas turbines and boilers by the continued development of specialized low cost biogas clean up systems that will allow for the use of catalytic after control systems.

Demonstrations of newer technologies in recent years could result in a commercially viable alternative to CEMS that is both reliable and feasible in terms of lower costs. For example, manufacturers of flue gas analyzers have, in recent years, developed low-cost multi-gas analyzers suitable for portable or stack-mounted use. Some preliminary testing of a new type of AFRC, which uses a different type of O2 sensor known as a wide-band O2 sensor, is another alternative that can be analyzed. Another technical approach might be to deploy technology utilizing the O2 signature of a post-catalyst O2 sensor and additional control concepts being developed by manufacturers. Since an underlying problem has been that engine, catalyst and AFRC manufacturers have developed systems independently, a system being co-developed to perform continuous diagnostics to assist operators in keeping rich-burn engines in compliance is possibly another alternative for demonstration.

Potential Air Quality Benefits:

Stationary engines, boilers, heaters, furnaces and ovens account for approximately 11 percent of total NO_x emissions and about 6 percent of total CO emissions. There has been a long-standing compliance problem with rich-burn IC engines in the basin and evidence indicates that many of these devices are operating with NOx and/or CO emissions above levels required in their permits. Projects could potentially reduce a significant class of NOx and CO emissions that are in excess of the assumptions in the AQMP and further enhance SCAQMD's ability to enforce full-time compliance.

Proposed Project: Develop and Demonstrate Clean Stationary Technologies

Expected SCAQMD Cost: \$250,000

Expected Total Cost: \$750,000

Description of Technology and Application:

Stationary sources, including VOC sources such as large printing facilities and furniture manufacturers, have become cleaner and cleaner due to the regulatory requirements for low emissions and the advancements in technology to meet those requirements. Best Available Control Technology (BACT) regulations, however, are only required for new, modified, or relocated sources. This project category is to develop and demonstrate new technologies that can provide emissions reductions in new installations or as retrofit modifications. Possible technology examples include:

- low NOx technologies (burners and ICEs);
- low-Btu gas technologies (e.g., digester, landfill, or diary gases);
- alternative fuels and hydrogen blends;
- alternative diesel fuels (emulsified, gas-to-liquids, biodiesel with aftertreatment);
- low emission refinery flares;
- catalytic combustion;
- cost-effective fuel cell and fuel cell hybrid distributed generation;
- fumes-to-fuel technology to replace thermal oxidizers and capture VOC emissions for electricity generation while ensuring no emission of air toxics; and
- boiler optimization design and strategies to improve efficiencies.

Depending on the technology, a proof-of-concept project, demonstration, or pre-commercial deployment would be considered to garner further information on the technology. Issues to investigate include viability (reliability, maintainability and durability) of the technology, cost-effectiveness and operator ease-of-use in order to assess commercialization.

Potential Air Quality Benefits:

The SCAQMD has a substantial number of older, small, stationary source technologies within its jurisdiction. Since these devices are not subject to continuous emissions monitoring system requirements, evidence suggests that these devices may not be operating at their permitted NOx, CO, hydrocarbon and PM emissions levels. Replacing these devices with cleaner and more reliable technologies or technology/fuel combinations can have dramatic reductions in all of these criteria pollutants. VOC emission reductions may also be achieved at larger stationary VOC sources to achieve the new federal ozone and PM2.5 standards.

Proposed Project:	Develop and Demonstrate Renewables-Based Energy Generation
	Alternatives

Expected SCAQMD Cost: \$200,000

Expected Total Cost: \$1,000,000

Description of Technology and Application:

The objective of this proposed project is to support the development and demonstration of clean energy, renewable alternatives in stationary and mobile applications. The technologies to be considered include thermal, photovoltaic and other solar energy technologies; wind energy systems; energy storage and conservation potentially including vehicle to grid or vehicle to building functionalities for alternative energy storage; biomass conversion; and other renewable energy and recycling technologies. Innovative solar technologies, such as solar thermal air conditioning and photovoltaic-integrated roof shingles, are of particular interest. Also, in the agricultural sections of the Basin, wind technologies could potentially be applied to drive large electric motor-driven pumps to replace highly polluting diesel-fired pumps. Besides renewable technologies, electrolyzer technology could be used to generate hydrogen, a clean fuel. Hydrogen, when used in regular engines, can substantially reduce tail-pipe emissions, while in fuel cells the emissions are reduced to zero.

The project is expected to result in pilot-scale production demonstrations, scale-up process design and cost analysis, overall environmental impact analysis and projections for ultimate clean fuel costs and availability. This project is expected to result in several projects addressing technological advancements in these technologies that may improve performance and efficiency, potentially reduce capital and operating costs, enhance the quality of natural gas generated from renewable sources for injection into natural gas pipelines, improve reliability and user friendliness and identify markets that could expedite the implementation of successful technologies.

Potential Air Quality Benefits:

The preliminary 2016 AQMP identifies the development and ultimately the implementation of non-polluting power generation. To gain the maximum air quality benefit, polluting fossil fuelfired electric power generation needs to be replaced with clean renewable energy resources or other advanced zero emission technologies, such as hydrogen fuel cells, particularly in a distributed generation context.

The proposed project is expected to accelerate the implementation of advanced zero emission energy sources. Expected benefits include directly reducing the emissions by the displacement of fossil generation; proof-of-concept and potential viability for such zero emission power generation systems; increased exposure and user acceptance of the new technology; reduced fossil fuel usage; and the potential for increased use, once successfully demonstrated, with resulting emission benefits, through expedited implementation. These technologies would also have a substantial influence in reducing global warming emissions.

Emission Control Technologies

Proposed Project: Develop and Demonstrate Advanced Aftertreatment Technologies

Expected SCAQMD Cost: \$300,000

Expected Total Cost: \$5,000,000

Description of Technology and Application:

There are a number of aftertreatment technologies which have shown substantial emission reductions in diesel engines. These technologies include diesel particulate filters (DPFs), oxidation catalysts, selective catalytic reduction (SCR) systems and NOx adsorbers. This project category is to develop and demonstrate these aftertreatment technologies alone or in tandem with an alternative fuel to produce the lowest possible PM, ultrafine particles, nanoparticles, NOx, CO, carbonyl and hydrocarbon emissions in retrofit and new applications. With the increasing focus on zero- and near-zero emission goods movement technologies, this category should examine idle reduction concepts and technologies that can be employed at ports and airports.

Possible projects include advancing the technologies for on-road retrofit applications such as heavy-duty line-haul diesel engines, street sweepers, waste haulers and transit buses. Applications for non-road may include construction equipment, yard hostlers, gantry cranes, locomotives, marine vessels, ground support equipment and other similar industrial applications. Potential fuels to be considered in tandem are low-sulfur diesel, emulsified diesel, biodiesel, gas-to-liquids, hydrogen and natural gas. This project category will also explore the performance, economic feasibility, viability (reliability, maintainability and durability) and ease-of-use to ensure a pathway to commercialization.

Potential Air Quality Benefits:

The transfer of mature emission control technologies, such as DPFs and oxidation catalysts, to the off-road sector is a potentially low-risk endeavor that can have immediate emissions reductions. Further development and demonstration of other technologies, such SCR and NOx adsorbers, could also have NOx reductions of up to 90%.

Proposed Project: Demonstrate On-Road Technologies in Off-Road and Retrofit Applications

Expected SCAQMD Cost: \$200,000

Expected Total Cost: \$1,000,000

Description of Technology and Application:

Heavy-duty on-road engines have demonstrated progress in meeting increasingly stringent Federal and state requirements. New heavy-duty engines have progressed from 2 g/bhp-hr NOx in 2004 to 0.2 g/bhp-hr NOx in 2010, which is an order of magnitude decrease in just six years. Off-road engines, however, have considerably higher emissions limits depending on the engine size. For example, Tier-3 standards for heavy-duty engines require only 3 g/bhp-hr NOx. There are apparent opportunities to implement cleaner on-road technologies in off-road applications. There is also an opportunity to replace existing engines in both on-road and off-road applications with the cleanest available technology. Current regulations require a repower (engine exchange) to only meet the same emissions standards as the engine being retired. Unfortunately, this does not take advantage of recently developed clean technologies.

Exhaust gas cleanup strategies, such as SCR, electrostatic precipitators, baghouses and scrubbers, have been used successfully for many years on stationary sources. The exhaust from the combustion source is routed to the cleaning technology, which typically requires a large footprint for implementation. This large footprint has made installation of such technologies on some mobile sources prohibitive. However, in cases where the mobile source is required to idle for long periods of time, it may be more effective to route the emissions from the mobile source to a stationary device to clean the exhaust stream.

Projects in this category will include utilizing proven clean technologies in novel applications, such as:

- demonstrating certified LNG and CNG on-road engines in off-road applications including yard hostlers, switcher locomotives, gantry cranes, waste haulers and construction equipment;
- implementing lower emission engines in repower applications for both on-road and offroad applications; and
- applying stationary best available control technologies, such as SCR, scrubbers, baghouses and electrostatic precipitators, to appropriate on- and off-road applications, such as idling locomotives, marine vessels at dock and heavy-duty line-haul trucks at weigh stations.

Potential Air Quality Benefits:

The transfer of mature emission control technologies, such as certified engines and SCR, to the non-road and retrofit sectors offers high potential for immediate emissions reductions. Further development and demonstration of these technologies will assist in the regulatory efforts which could require such technologies and retrofits.

Health Impacts Studies

Proposed Project:Evaluate Ultrafine Particle Health EffectsExpected SCAQMD Cost:\$150,000

Expected Total Cost: \$2,000,000

Description of Technology and Application:

Reducing diesel exhaust from vehicles has become a high priority in the South Coast Air Basin since CARB identified the particulate phase of diesel exhaust as a surrogate for all of the toxic air contaminant emitted from diesel exhaust. Additionally, health studies indicate that the ultrafine portion of particulate matter may be more toxic on a per-mass basis than other fractions. Several technologies have been introduced and others are under development to reduce diesel emissions. These include among others low-sulfur diesel fuel, particulate matter traps and heavy-duty engines operating on alternative fuel such as CNG and LNG. Recent studies have shown that control technologies applied to mobile sources have been effective in reducing the mass of particulates emitted. However, there is also evidence that the number of ultrafine particles on and near roadways has increased, even while the mass of particulates has decreased. To have a better understanding of changes in ultrafine particulate emissions from the application of the new technologies and the health effects of these emissions, an evaluation and comparison of ultrafine particulate matter and the potential impacts on community exposures are necessary.

In this project, measurements and chemical composition of ultrafine particulates will be done, as well as studies conducted to characterize their toxicity. The composition of the particulates can further be used to determine the contribution from specific combustion sources. Additionally, engine or chassis dynamometer testing may be conducted on heavy-duty vehicles to measure, evaluate and compare ultrafine particulate matter, PAH and other relevant toxic emissions from different types of fuels such as CNG, low-sulfur diesel, biofuels and others. This project needs to be closely coordinated with the development of technologies for alternative fuels, aftertreatment and new engines in order to determine the health benefits of such technologies.

Furthermore, gasoline direct injection (GDI) vehicles are known for higher efficiency and power output but the PM emissions profile is not well understood especially on secondary organic aerosol (SOA) formation potential. As manufacturers introduce more GDI models in the market to meet new fuel economy standards, it is important to understand the SOA potential from these vehicles as it could lead to further impact on the ambient PM concentration in our region. Consequently, in 2015 a project was initiated with UCR/CE-CERT to investigate the physical and chemical composition of aerosols from GDI vehicles using a mobile environmental chamber that has been designed and constructed to characterize secondary emissions.

Potential Air Quality Benefits:

The AQMP for the South Coast Basin relies on significant penetration of low emission vehicles to attain federal clean air standards. Reduction of particulate emissions from the combustion of diesel and other fuels is a major priority in achieving these standards. This project would help to better understand the nature and amount of ultrafine particulates generated by different types of fuels and advanced control technologies as well as provide information on potential health effects of ultrafine particles. Such an understanding is important to assess the emission reduction potentials and health benefits of these technologies. In turn, this will have a direct effect on the policy and regulatory actions for commercial implementation of alternative fuel vehicles in the Basin.

Proposed Project: Conduct Monitoring to Assess Environmental Impacts

Expected SCAQMD Cost: \$150,000

Expected Total Cost: \$500,000

Description of Technology and Application:

Facilities, buildings, structures, or highways which attract mobile sources of pollution are considered "indirect" sources. Ambient and saturation air monitoring near sources such as ports, airports, rail yards, distribution centers and freeways is important to identify the emissions exposure to the surrounding communities and provide the data to then conduct the health impacts due to these sources. This project category would identify areas of interest and conduct ambient air monitoring, conduct emissions monitoring, analyze the data and assess the potential health impacts from mobile sources. The projects would need to be at least one year in duration in order to properly assess the air quality impacts in the area.

Potential Air Quality Benefits:

The proposed project will assist in the evaluation of adverse public health impacts associated with mobile sources. The information will be useful in (a) determining whether indirect sources have a relatively higher impact on residents living in close proximity; and (b) providing guidance to develop some area-specific control strategies in the future should it be necessary.

Proposed Project: Assess Sources and Health Impacts of Particulate Matter

Expected SCAQMD Cost: \$150,000

Expected Total Cost: \$300,000

Description of Technology and Application:

Previous studies of ambient levels of toxic air contaminants, such as the MATES series of studies, have found that diesel exhaust is the major contributor to health risk from air toxics. Analyses of diesel particulate matter in ambient samples have been based on measurements of elemental carbon. While the bulk of particulate elemental carbon in the South Coast Air Basin is thought to be from combustion of diesel fuels, it is not a unique tracer for diesel exhaust.

The MATES III study collected particulate samples at ten locations in the South Coast Air Basin. Analysis of particulate bound organic compounds was utilized as tracers to estimate levels of ambient diesel particulate matter as well as estimate levels of particulate matter from other major sources. Other major sources that were taken into consideration include automobile exhaust, meat charbroiling, road dust, wood smoke and fuel oil combustion. Analyzing for organic compounds and metals in conjunction with elemental carbon upon collected particulate samples was used to determine contributing sources.

MATES IV, initiated in mid-2012, included an air monitoring program, an updated emissions inventory of toxic air contaminants and a regional modeling effort to characterize risk across the Basin. In addition to air toxics, MATES IV also measured ultrafine particle concentrations and black carbon at the monitoring sites as well as near sources such as airports, freeways, rail yards, busy intersections and warehouse operations.

This project category would include other related studies, such as toxicity assessment based on age, source (heavy-duty, light-duty engines) and composition (semi-volatile or non-volatile fractions) to better understand the health effects and potential community exposures. Additionally, early identification of new health issues could be of considerable value and could be undertaken in this project category.

Potential Air Quality Benefits:

Results of this work will provide a more robust, scientifically sound estimate of ambient levels of diesel particulate matter as well as levels of particulate matter from other significant combustion sources, including gasoline and diesel generated VOCs. This will allow a better estimation of potential exposures to and health effects from toxic air contaminants from diesel exhaust in the South Coast Air Basin. This information in turn can be used to determine the health benefits of promoting clean fuel technologies.

Outreach and Technology Transfer

Proposed Project: Assess and Support Advanced Technologies and Disseminate Information

Expected SCAQMD Cost: \$500,000

Expected Total Cost: \$800,000

Description of Project:

This project supports the assessment of clean fuels and advanced technologies, their progress towards commercialization and the dissemination of information on demonstrated technologies. The objective of this project is to expedite the transfer of technology developed as a result of Technology Advancement Office projects to the public domain, industry, regulatory agencies and the scientific community. This project is a fundamental element in the SCAQMD's outreach efforts to expedite the implementation of low emission and clean fuels technologies and to coordinate these activities with other organizations.

This project may include the following:

- technical review and assessment of technologies, projects and proposals;
- support for alternative fuel refueling and infrastructure;
- advanced technology curriculum development, mentoring and outreach to local schools;
- emissions studies and assessments of zero emission alternatives;
- advanced technology vehicle demonstrations;
- preparation of reports, presentations at conferences, improved public relations and public communications of successful demonstrations of clean technologies;
- participation in and coordination of workshops and various meetings;
- support for training programs related to fleet operation, maintenance and refueling of alternative fuel vehicles;
- publication of technical papers, reports and bulletins; and
- production and dissemination of information, including web sites.

These objectives will be achieved by consulting with industry, scientific, health, medical and regulatory experts and co-sponsoring related conferences and organizations, resulting in multiple contracts. In addition, an ongoing outreach campaign will be conducted to encourage decision-makers to voluntarily switch to alternatively fueled vehicles and train operators to purchase, operate and maintain these vehicles and associated infrastructure.

Potential Air Quality Benefits:

SCAQMD adopted fleet regulations requiring public and private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. Expected benefits of highlighting success stories in the use of advanced alternatively fueled vehicles could potentially expedite the acceptance and commercialization of advanced technologies by operators seeking to comply with the provisions of the recently adopted SCAQMD fleet rules. The resulting future emissions benefits will contribute to the goals of the AQMP.

Proposed Project:	Support Implementation of Various Clean Fuels Vehicle Incentive
	Programs

Expected SCAQMD Cost: \$400,000

Expected Total Cost: \$400,000

Description of Project:

This project supports the implementation of zero emission vehicle incentive programs, the Carl Moyer incentives program and the school bus incentives program. Implementation support includes application approval, grant allocation, documentation to the CARB, verification of vehicle registration and other support as needed. Information dissemination is critical to successful implementation of a coordinated and comprehensive package of incentives. Outreach will be directed to vehicle dealers, individuals and fleets.

Potential Air Quality Benefits:

As described earlier, the SCAQMD will provide matching funds to implement several key incentives programs to reduce diesel emissions in the Basin. Furthermore, the SCAQMD recently adopted fleet regulations requiring public and private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. Expected benefits of highlighting zero emission vehicle incentives could potentially expedite the acceptance and commercialization of advanced technologies by operators seeking to comply with the provisions of the recently adopted SCAQMD fleet rules. The resulting future emissions benefits will contribute to the goals of the AQMP. The school bus program and the Carl Moyer incentives program will also reduce large amounts of NOx and PM emissions in the basin in addition to reducing toxic air contaminants.

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Appendix A

SCAQMD Advisory Groups

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Technology Advancement Advisory Group

Dr. Matt Miyasato, Chair	SCAQMD
Fabiola P. Lao	Coalition for Clean Air
Dr. Alberto Ayala	California Air Resources Board
Pending	U.S. Department of Energy
Dr. John Froines	Professor Emeritus University of California, Los Angeles
Gretchen Hardison	Los Angeles Department of Water and Power; Chair of Technical Advisory Committee of the Mobile Source Air Pollution Reduction Review Committee
Pending	Southern California Edison
Philip J. Hodgetts	.Clean Air Now
Randall Lewis	Lewis Group of Companies
Tim Olson	California Energy Commission
Pending	Western States Petroleum Association
Cherif Youssef	Southern California Gas Company

SB 98 Clean Fuels Advisory Group

Dr. Matt Miyasato, Chair	SCAQMD
Robert Bienenfeld	American Honda Motor Company Inc
Dr. Blair Folsom	Independent Consultant in Combustion Technology
Dr. Mridul Gautam	West Virginia University, Adjunct Professor, & University of Nevada-Reno
Dr. Fritz Kalhammer	Independent Consultant in Energy and Process Technology
Dr. Melanie Marty	California Environmental Protection Agency, Office of Environmental Health Hazard Assessment
Dr. Wayne Miller	University of California, Riverside, College of Engineering, Center for Environmental Research and Technology
Dr. Vernon Roan	University of Florida, Professor Emeritus
Dr. Scott Samuelsen	University of California, Irvine, Combustion Laboratory/National Fuel Cell Research Center
Dr. Robert Sawyer	Sawyer Associates
Kevin Walkowicz	National Renewable Energy Laboratory
Dr. Nicholas Vanderborgh	Independent Consultant in Fuel Cell Technologies
Michael Walsh	Independent Consultant in Motor Vehicle Pollution Control

Appendix B

Open Clean Fuels Contracts as of January 1, 2016

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Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
Electric/H	lybrid Technologies a	nd Infrastructure				
08063	Technologies Worldwide, Inc.	Develop & Demonstrate 20 Plug-In Hybrid Electric Vehicles		02/29/16	2,165,613	2,885,266
10659	Electric Power Research Institute	Data Collection to Further Evaluate Performance and Operational Benefits to Optimize Fleet of Medium-Duty Plug-In Hybrid Vehicles	07/27/10	09/30/16	250,000	844,678
11606	Odyne Systems, LLC	Develop and Demonstrate Plug-In Hybrid Electric Drive System for Medium- and Heavy-Duty Vehicles	07/08/11	11/30/16	494,000	2,599,000
11615	Parker Hannifin Corporation	Develop & Demonstrate Up to Four Heavy-Duty Hydraulic Hybrid Vehicles	01/18/13	08/31/16	250,000	2,000,000
12028	Electric Vehicle International, Inc.	Demonstrate and Replace UPS Diesel Delivery Trucks with Zero- Emission Medium-Duty Trucks	09/09/11	09/08/17	1,400,000	4,872,000
13058	Capstone Turbine Corporation	Develop Microturbine Series Hybrid System for Class 7 Heavy- Duty Vehicle Applications	08/12/13	03/30/16	360,000	1,210,000
13396	Transportation Power Inc.	Develop and Demonstrate Seven Class 8 Zero Emission Electric Trucks	04/19/13	12/31/16	375,000	2,285,368
13404	Penske Honda of Ontario	Lease Two Honda Fit Electric Vehicles for Three Years	05/02/13	05/01/16	31,307	31,307
13410	Selman Chevrolet Company	Lease Three 2013 Chevrolet Volt Extended-Range Electric Vehicles for Three Years	04/03/13	04/02/16	41,084	41,084
13426	Transportation Power, Inc.	Develop & Demonstrate Catenary Class 8 Trucks (1 Electric & 1 CNG Platform)	06/07/13	06/06/16	2,617,887	3,182,795
13429	Longo Toyota	Lease One Toyota RAV4 Electric Vehicle for Three Years	04/19/13	04/18/16	19,618	19,618
13433	U.S. Hybrid Corporation	Develop and Demonstrate Two Class 8 Zero-Emission Electric Trucks	06/26/13	09/30/17	75,000	150,000
13439	City of Carson	MOU for Catenary Zero Emission Goods Movement Project	10/01/13	09/30/16	0	0
14062	Siemens Industry Inc.	Develop and Demonstrate Catenary Zero Emissions Goods Movement System and Develop and Demonstrate Diesel Catenary Hybrid Electric Trucks	07/14/14	07/13/18	5,500,000	14,780,000
14156	Galpin Motors Inc. (Galpin Ford)	Lease of Two Fusion Energi and One C-Max Energi PHEVs for a Three-Year Period	01/28/14	01/27/17	49,298	49,298
14184	Clean Fuel Connection Inc.	DC Fast Charging Network Provider	04/04/14	06/30/20	250,000	1,318,000
14052	Altec Capital Services, LLC	Lease of Two Plug-In Hybrid Electric Vehicles	01/02/15	01/01/20	61,302	61,302
14202	Adopt-A-Charger	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	04/14/14	04/30/16	0	0
14204	Associated of Los Angeles	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	10/10/14	04/30/16	0	0

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
	ybrid Technologies a	and Infrastructure (cont'd)			I	·
14222	Odyne Systems,LLC	Develop and Demonstrate Plug-In Hybrid Electric Retrofit System for Class 6 to 78 Trucks	04/24/14	04/23/16	389,000	2,226,57
14224	Complete Coach Works	Develop and Test Retrofit All Electric Transit Bus	04/24/14	02/28/17	395,000	867,182
14256	National Strategies LLC	Develop and Demonstrate Vehicle-2-Grid Technology	09/05/14	03/04/18	250,000	3,377,689
14323	Selman Chevrolet Company	Lease Two 2014 Chevrolet Volt Extended-Range Electric Vehicles for Three Years	03/28/14	03/27/17	30,932	30,932
14336	Los Angeles Department of Water & Power	Install and Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project)	07/31/15	04/03/16	0	(
15021	Transportation Power Inc.	Upgrade and Demonstrate Two Electric Yard Tractors	07/14/14	12/31/16	75,000	405,000
15382	ChargePoint, Inc.	Install Electric Charging Infrastructure	01/23/15	01/22/17	162,000	162,000
15448	University of California Los Angeles	Site Selection for DC Fast Charge Network	04/21/15	04/30/16	10,000	10,000
15650	University of California San Diego	Develop and Demonstrate Solar Forecasting for Larger Solar Arrays with Storage and EV Charging	07/17/15	01/16/18	98,908	1,655,278
15665	City of Santa Monica	Install and Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project)	07/31/15	04/03/16	0	(
15680	National Renewable Energy Laboratory	ComZEV – Develop Detailed Technology and Economics-Based Assessment for Heavy-Duty Advanced Technology Development	08/28/15	08/27/16	500,000	500,000
16022	Gas Technology Institute	ZECT II: Develop and Demonstrate One Class 8 CNG Hybrid Electric Drayage Truck	12/04/15	06/30/20	1,578,802	5,627,319
16046	Transportation Power, Inc.	ZECT: Develop and Demonstrate Two Class 8 CNG Plug-In Hybrid Electric Drayage Trucks	12/04/15	09/30/17	195,326	2,103,446
16047	U.S. Hybrid Corporation	ZECT: Develop and Demonstrate Three Class 8 LNG Plug-In Hybrid Electric Drayage Trucks	11/06/15	09/30/17	22,896	1,996,67

Hydrogen and Mobile Fuel Cell Technologies and Infrastructure

11150	Hydrogen Frontier, Inc.	Maintenance & Operation of City of Burbank Hydrogen Fueling Station	11/24/10	01/23/16	475,000	1,635,000
10482	California State University Los Angeles	Install and Demonstrate PEM Electrolyzer, Providing Hydrogen Fueling for Vehicles and Utilizing the Technology in the Engineering Technology Curriculum at the University	03/04/11	10/03/17	250,000	1,662,000
11555	University of California Los Angeles	Construct Hydrogen Fueling Infrastructure	12/07/12	12/31/19	400,000	2,589,990

Contract Contractor Project Title	Start	End	SCAQMD	Project
	Term	Term	\$	Total \$

Hydrogen and Mobile Fuel Cell Technologies and Infrastructure (cont'd)

12075	Linde, LLC	Expand Hydrogen Fueling Infrastructure	11/02/12	11/02/18	250,000	2,732,177
13155	Fletcher Jones Motor Cars (Mercedes-Benz)	Lease Two F-Cell Fuel Cell Vehicles for Two Years	02/08/13	02/08/17	44,995	44,995
14139	Hyundai America Technical Center Inc.	No-Cost Lease of Fuel Cell Vehicle for Two Years	12/13/13	12/31/17	0	0
14684	California Department of Food and Agriculture, Division of Measurement Standards	Conduct Hydrogen Station Site Evaluations for Site Certifications for Commercial Sale of Hydrogen	12/11/15	12/31/16	100,000	100,000
15150	Air Products and Chemicals Inc.	Install and Upgrade Eight Hydrogen Fueling Stations Throughout SCAB (including SCAQMD's Diamond Bar Hydrogen Station)	10/10/14	04/09/19	1,000,000	17,335,439
15366	EPC LLC	Operate and Maintain Publicly Accessible Hydrogen Fueling Station at SCAQMD's Headquarters	10/10/14	09/14/17	0	0
15609	ITM Power, Inc.	Installation of Riverside Renewable Hydrogen Fueling Station	10/06/15	10/05/19	200,000	2,325,000
15611	Ontario CNG Station, Inc.	Installation of Ontario Renewable Hydrogen Fueling Station	07/10/15	07/09/20	200,000	2,325,000
15619	H2 Frontier Inc.	Installation of Chino Renewable Hydrogen Station	12/04/15	12/03/20	200,000	4,558,274
15641	Hardin Hyundai	Three-Year Lease of 2015 Tucson Fuel Cell Vehicle	06/15/15	06/14/18	22,862	22,862
16039	Lawrence Livermore National Laboratory	Demonstrate Prototype Hydrogen Sensor and Electronics Package	12/10/15	02/09/17	175,000	350,000
16151	Toyota Motor Sales USA	No-Cost Loan of 2015 Toyota Mirai Fuel Cell Vehicle	12/15/15	01/05/16	0	0
16171	Longo Toyota	Three-Year Lease of 2015 Toyota Mirai Fuel Cell Vehicle	12/15/15	12/14/18	24,567	24,567

Engine Systems

14364	Cummins Inc.	Develop, Integrate and Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	07/14/14	08/20/16	2,061,000	3,869,000
15626	Cummins Westport, Inc.	Develop, Integrate and Demonstrate Ultra Low-Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	07/10/15	12/31/16	3,500,000	7,233,000
15632	Gas Technology Institute	Develop Ultra Low-Emission Natural Gas Engine for On-Road Medium-Duty Vehicles	09/01/15	06/30/17	750,000	1,800,0000

Infrastructure and Deployment

05250 Downs Commercial Purchase & Install New L/CN Fueling, Inc. Fueling System at Commercial Fueling Station in Temecula	
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Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
nfrastruc	ture and Deployment	(cont'd)				
06042	University of California Los Angeles	Upgrade Existing CNG Public Access Station with Dispenser & Card Reader	09/05/06	12/31/16	15,921	31,842
06084	Clean Energy	Upgrade Existing LNG Facility to L/CNG at Riverside County Waste Management Dept's Aqua Mansa Facility in Riverside	04/13/06	02/28/16	120,000	400,000
06091	City of Whittier	Purchase & Install New Public Access CNG Fueling Station at City Yard	03/18/06	12/31/16	150,000	450,000
07153	Foothill Transit	Purchase & Install New Public Access CNG Refueling Station in Irwindale	11/02/09	06/30/16	250,000	3,350,000
07246	USA Waste of California, Inc., dba L.A. Metro	Purchase & Install New LNG Storage Tank at Long Beach LNG Refueling Station	12/24/08	06/30/17	200,000	440,000
07320	Orange County Transportation Authority	Install New CNG Station in the City of Santa Ana	12/21/07	03/31/16	350,000	5,841,729
08043	University of California Los Angeles	Public Access CNG Refueling Station Upgrade for UCLA Transportation	05/02/08	12/31/16	140,000	350,000
08044	Beaumont Unified School District	Install Limited Access CNG Refueling Station	03/05/09	12/31/16	288,000	615,994
08098	Redlands Unified School District	Purchase & Install New CNG Refueling Station	01/25/08	12/31/17	525,000	700,000
09165	California Cartage Company	Deployment of 2010 Emissions Standards Compliant LNG Trucks	10/31/08	07/31/16	358,000	11,880,000
09218	Rim of the World Unified School District	Install Mountain Safety Equipment on Five New CNG School Buses	01/05/10	12/31/16	65,850	65,850
09364	Rim of the World Unified School District	Construct & Install a CNG Fueling Station	12/30/10	12/31/16	257,000	425,000
10067	Rim of the World Unified School District	Install Mountain Safety Equipment on Seven New CNG School Buses	12/21/09	12/31/16	92,190	92,190
11548	Clean Energy (novated from Mansfield Gas Equipment Systems)	Buydown Incentive Program for CNG Home Refueling Appliance "Phill"	09/07/12	01/31/16	60,000	356,000
12135	Placentia-Yorba Linda Unified School District	Upgrade CNG Fueling Station	11/18/11	11/30/17	60,000	60,000
12267	West Covina Unified School District	Upgrade CNG Fueling Facility	10/12/12	12/31/17	60,000	60,000
12851	Clean Energy	Install, Operate and Maintain Three LNG Fueling Stations (Fontana, Coachella and Perris)	10/05/12	12/31/18	1,400,000	4,277,323
12852	City of Covina	Construct Public Access CNG Fueling Stations	10/12/12	12/31/18	200,000	618,429
12853	Rainbow Disposal Co. Inc.	Upgrade CNG Fueling Station	03/08/13	12/31/18	200,000	400,000
12854	Waste Management, Inc.	Upgrade LNG Fueling Station at Baldwin Park Facility	08/17/12	12/31/18	300,000	1,588,100
13401	Nite-Hawk Sweepers LLC	Demonstrate Natural Gas- Powered Parking Lot Sweepers	08/28/13	05/31/16	90,000	200,000

Contract Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
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Infrastructure and Deployment (cont'd)

14219	City of West Covina	Upgrade CNG Station at City Yard	05/15/14	06/15/17	200,000	618,429
14311	Southern California Gas Company	Install and Maintain CNG Fueling Station in Murrieta for SoCalGas	07/11/14	12/31/17	217,000	1,385,000
15438	United Parcel Service, Inc.	Refurbish/Upgrade Ontario UPS LCNG Infrastructure	12/31/14	06/30/18	246,707	484,535
16076	Coachella Valley Association of Governments	Purchase and Deploy One Heavy- Duty CNG Paratransit Vehicle	12/01/15	11/20/19	140,000	140,000

Fuels/Emission Studies

10722	University of California	Re-Establish Testing Facility &	08/06/10	03/31/16	60,000	60,000
	Riverside/CE-CERT	Quantify PM Emission Reductions				
		from Charbroiling Operations				
13402	University of California	Next Sustainable Transportation	05/02/14	07/01/16	120,000	2,760,000
	Davis-Office of	Energy Pathways (STEPS)				
	Research	Program				
14162	National Renewable	Utilization of Fleet DNA Approach	02/26/14	06/30/17	174,985	199,985
	Energy Laboratory	and Capabilities to Provide			-	
	5, ,	Vehicle Vocational Analysis in				
		SCAQMD				
15607	University of California	Innovative Transportation System	12/19/15	11/30/16	79,980	139,980
	Riverside/CE-CERT	Solutions for NOx Reductions in				,
		Heavy-Duty Fleets				
15623	University of California	Ozone and SOA Formation from	10/02/15	06/30/16	75,000	480,338
	Riverside/CE-CERT	Gasoline and Diesel Compounds			-	-
15625	University of California	Evaluate4 SOA Formation	10/02/15	06/30/16	149,972	224,972
	Riverside/CE-CERT	Potential from Light-Duty GDI			,	,
		Vehicles				
15636	University of California	Evaluate PEV Utilization Through	12/15/15	02/14/17	170,000	270,000
	Riverside/CE-CERT	Advanced Charging Strategies in				
		a Smart Grid System				

Stationary Clean Fuels Technology

10723	Eastern Municipal Water District	Retrofit Digester Gas Engine with NO _x Tech Aftertreatment Emission Control Technology		03/31/16	85,000	889,000
13045	ClearEdge (novated from UTC Power Corp.)	Energy Supply and Services Agreement to Install One 400 kW Phosphoric Acid Fuel Cell at SCAQMD Headquarters	09/28/12	09/27/22	450,000	4,252,680

Health Impacts Studies

12208	University of California Riverside/CE-CERT	Determine the Physical and Chemical Composition and Associated Health Effects of Tailpipe PM Emissions	01/21/12	01/31/16	175,000	1,375,000
12865	University of California Los Angeles	Develop Quantitative Cellular Assays for Use in Understanding the Chemical Basis of Air Pollutant Toxicity	06/08/12	07/31/16	368,457	368,457
14171	Southern California Research Center/Allergy & Asthma Associates of Southern California	Risk of Incident Asthma Among Children from In-Utero Exposures to Traffic Related Pollutants	09/22/14	03/21/16	99,670	317,119

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$			
Health Im	Health Impacts Studies (cont'd)								
14172	University of California Irvine	The Relation of Airway and Systemic Oxidative Stress to Particulate Air Pollution Exposures in an Elderly Cohort	02/17/14	08/16/16	159,974	376,368			

Outreach and Technology Transfer

00069	Walsh Consulting	Technical Assistance Relating to the Use of Alternative Fuels in Mobile Sources	02/17/00	02/28/16	35,000	35,000
05128	Mid-Atlantic Research Institute LLC	Development, Outreach & Commercialization of Advanced Heavy-Duty and Off-Road Technologies	08/08/05	03/31/17	70,000	70,000
07062	The Tioga Group, Inc.	Technical Assistance Related to Air Quality Impacts of Regional Goods	12/19/06	11/30/16	58,000	58,000
08210	Sawyer Associates	Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities	02/22/08	02/28/16	25,000	25,000
09252	JWM Consulting Services	Technical Assistance with Review & Assessment of Advanced Technologies, Heavy-Duty Engines, and Conventional & Alternative Fuels	12/20/08	06/30/16	30,000	30,000
12376	University of California Riverside	Technical Assistance with Alternative Fuels, Biofuels, Emissions Testing and Zero- Emission Transportation Technology	06/13/14	05/31/16	75,000	75,000
12380	The Tioga Group	Technical Assistance Related to Emissions, Advanced Technologies and Goods Movement	04/13/12	04/30/16	25,000	25,000
12381	Integra Environmental Consulting Inc.	Technical Assistance Related to Emission Inventories, Goods Movement and Off-Road Sources	04/06/12	04/30/16	110,000	110,000
12453	Tech Compass	Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis and Aftertreatment Technologies	06/21/12	05/30/16	75,000	75,000
13194	Clean Fuel Connection Inc.	Technical Assistance with Alternative Fuels, Renewable Energy and Electric Vehicles	12/07/12	09/30/16	140,000	140,000
13198	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alternative Fuels, Emissions Analysis and On-Road Sources	12/14/12	12/13/16	135,000	135,000
13408	University of California Irvine	Demonstrate Building Integration of Electric Vehicles, Photovoltaics and Stationary Fuel Cells	09/30/13	09/30/16	150,000	270,000
14185	Three Squares Inc.	Conduct Education Outreach for the Basin DC Fast Charging Network Project	04/11/15	10/31/16	89,183	89,183

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
Outreach	and Technology Trai	nsfer (cont'd)				
15344	Clean Fuel Connection, Inc.	Technical Assistance with Alternative Fuels, Electric Vehicles, Charging and Fueling Infrastructure and Renewable Energy	09/22/14	09/22/16	60,000	60,000
15369	Breakthrough Technologies Institute, Inc.	Technical Assistance with Low- and Zero-Emission Vehicles, Fuel Cells, Stationary Applications and Emissions Analysis	11/07/14	11/06/16	30,000	30,000
15380	ICF Resources LLC	Technical Assistance with Goods Movement, Alternative Fuels and Zero-Emission Transportation Technologies	12/12/14	12/11/16	30,000	30,000
15415	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alternative Fuels and Fueling Infrastructure, Emissions Analysis and On-Road Sources	11/07/14	11/06/16	60,000	60,000
15507	Jerald Cole	Technical Assistance with Alternative Fuels, Emissions Analysis, and Combustion Technologies	01/09/15	01/08/17	30,000	30,000
15516	Cordoba Corporation	Technical Assistance with Construction of Zero Emissions Goods Movement Demonstration Project	03/27/15	03/31/18	74,500	74,500
15610	Goss Engineering, Inc.	Conduct Engineering Services at SCAQMD Headquarters	06/02/15	06/01/16	50,000	50,000
16055	University of California Irvine	Cosponsor Solar Decathlon – Develop and Demonstrate Solar- Powered House at 2016	11/05/15	02/29/16	50,000	730,000

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Appendix C

Final Reports for 2015

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SCAQMD Contract #08219

June 2015

Develop and Demonstrate Ten Plug-In Hybrid Electric Vehicles

Contractor

A123Systems (formerly Hymotion, Inc.)

Cosponsor

SCAQMD

Project Officer

Lisa Mirisola

Background

There has been increasing support for PHEVs from a wide array of organizations, including electric utilities, environmental groups, energy independence organizations, and other air districts. Several automobile manufacturers have also announced plans to investigate the technology but voice concerns about the battery durability in terms of calendar and cycle life.

Project Objective

At its November 3, 2006 meeting, the SCAQMD Governing Board approved RFP #P2007-14 to design, engineer, convert, test. certify. demonstrate, and maintain for 60 months 30 plugin hybrid electric vehicles with supporting infrastructure at up to 15 demonstration sites in the South Coast Air Basin. At the March 2, 2007 meeting, the Governing Board awarded funding to A123Systems Inc. (formerly Hymotion, Inc.) to convert ten new Toyota Prius vehicles to plug-in electric vehicles using advanced hybrid nanophosphate lithium-ion battery systems and controls.

Technology Description

Similar to commercially available hybrid-electric vehicles, PHEVs utilize a battery pack and an electric motor in concert with an internal combustion engine. PHEVs, however, can employ a larger battery pack which can be designed to extend the electric portion of the driving cycle, providing improved fuel economy, lower greenhouse gas emissions, and reduced petroleum dependence. The larger battery pack must be fully recharged external to the vehicle so a charger, plug, and energy management system must be integrated into the vehicle. This design is an example of a blended strategy that provides electric range in limited, low power demand situations, but not miles of dedicated all-electric range now available from major automakers. This system is intended as an aftermarket product for installation at repair shops and dealerships.

Status

CARB Executive Order D-647-1 issued September 8, 2008 limited sales of 500 units of A123 L5 BREM OVCC for 2004 – 2009 Toyota Prius. The L5 BREM OVCC conversion system includes a lithium-ion add-on battery pack, a current sensor, battery temperature sensors, and a controller. Two of the 500 units allowed were converted by local subcontractor The Dr. in Fountain Valley, California for this SCAQMD demonstration program, and delivered to SCAQMD August 7, 2009.



Figure 1: A123 Plug-In Hybrid Conversion

One of these converted vehicles was tested at a Chrysler facility in Michigan from July – November 2010, but was unable to prove compliance with new CARB requirements necessary for commercialization as an aftermarket product in California. No additional vehicles were converted for SCAQMD. A123 notified SCAQMD on January 18, 2011 that they abandoned the process for CARB certification and do not have resources to continue supporting this demonstration project with SCAQMD.

Results

Idaho National Lab compared fuel economy data from 180 A123 converted Prius (including one at SCAQMD) with stock Prius performance and found fuel efficiency improvement from 44 mpg to 49 mpg overall. Results are posted at http://avt.inl.gov/.



Figure 2: Data loggers were installed in the two converted vehicles and feedback on charging, trips, and current status were available from Gridpoint V2Green screens.

Benefits

The A123 converted plug-in hybrids' greatest value was as outreach tools to begin to educate the public and show the potential for plug-in hybrids before commercial plug-in hybrids were introduced in December 2010 by General Motors (Chevrolet Volt) and Toyota (Prius PHV).

Project Costs

The total cost for this project was \$962,667 with SCAQMD cost-share not to exceed \$622,667 and in-kind cofunding to be provided by Aerovironment (\$100,000) for the fast-charging demonstration and from participating cities (\$240,000) for Prius conversions. However, this

project was terminated early and unspent funds totaled \$497,667, which included all in-kind cofunding.

Commercialization and Applications

During the term of this contract, plug-in hybrid passenger vehicles have electric been commercialized by Ford, General Motors, Toyota, and many other automakers. The business case for aftermarket conversion of hybrid passenger vehicles to plug-in hybrid is not currently attractive for additional investment or commercialization. A123 declared Chapter 11 bankruptcy in 2012, and was purchased by Chinese auto supplier Wanxiang Group in 2013. After emerging from Chapter 11 bankruptcy in 2013, A123 refocused its business on low-voltage lithium-ion batteries used by automakers for weight savings and to power other MPG-lowering technologies. This is a diversion from its original plan of manufacturing large lithium-ion battery packs to power electric vehicles, though it still does that work for the Chinese market. In the low-voltage market, A123 supplies automakers such as Daimler AG with 12-volt starter batteries and 48-volt microhybrid batteries, which are used in various technologies.

November 2015

Electric Conversion of Medium-Duty Fleet Vehicles

Contractor

AC Propulsion Inc.

Cosponsors

AC Propulsion Inc. Comcast SCAQMD

Project Officer

Brian Choe

Background

Medium-duty vehicles (8,500 to 14,000 pounds Gross Vehicle Weight Rating) are responsible for a disproportionate amount of emissions in the South Coast Air Basin (Basin). These vehicles account for 5% of the vehicle population, but are responsible for approximately 12% of the 2014 on-road mobile source NOx emissions according to the 2012 AQMP. Electrification of vehicles in this segment will provide considerable reductions in emissions with substantial benefits to the surrounding communities along their service However, successful deployment of routes. electric vehicles in this segment requires that specific vocations be properly matched to take advantage of their attributes. Hence, SCAQMD strongly supports demonstration of electric vehicles in a variety of vocations and duty cycles to identify matching applications and to promote commercialization of zero-emission transportation technologies.

Project Objective

AC Propulsion, a Southern California-based developer and manufacturer of electric vehicle propulsion systems, partnered with Comcast to develop and demonstrate medium-duty electric service vans to evaluate their viability in commercial service. The project was to convert three Comcast service vans to electric propulsion for demonstration in two stages. AC Propulsion converted a first prototype for a precursory evaluation by Comcast prior to converting the rest. Upon successful assessment of the prototype, AC Propulsion was to build the remaining two demonstration vehicles, addressing any deficiencies identified by Comcast.

Technology Description

The electric drive system developed by AC Propulsion was used to convert Ford E250 vans supplied by Comcast, utilizing a proprietary power electronics unit that maximizes efficiency over a broad operating range with regenerative braking capability. The propulsion system is powered by a 180 kW AC induction motor with a 41 kWh lithium-ion battery pack to provide an operating range of approximately 80 miles. The battery pack can be recharged in 7 hours with Level 2 and in 3.5 hours with a fast charger. The vehicles are also equipped with a Vehicle-to-Grid interface to charge back to the grid during emergencies or high-demand charge periods.



Comcast Electric Service Van

Status

AC Propulsion completed conversion of all three Comcast service vans to EVs but experienced delays in the deployment of the vehicles due to coordination challenges with project partners. Despite the delay, the electric vans were finally deployed in commercial service but they were not operated as planned. This was largely due to the fact that Comcast changed their operation mode from maintaining the vehicles at a central location to allowing drivers to take them home after their shifts. Without EVSEs to charge the vehicles at home, the drivers opted to switch back to conventional service vans and the electric vehicles were left unused. AC Propulsion has sought other partners to demonstrate the electric vans without any success. As a result, AC Propulsion requested to terminate this project in November 2015.

Results

As requested by AC Propulsion, this project is terminated without having completed vehicle demonstration in commercial service. However, AC Propulsion intends to continue investigating options to repurpose these vehicles in related projects and is currently in discussion with University of Delaware to use them in a vehicleto-grid study program.

Benefits

Electrification of medium-duty vehicles, including service vans and delivery trucks, will help to advance electric and hybrid technologies in transportation sectors, providing substantial reductions in both criteria pollutants and greenhouse gases.

Project Costs

The total project cost was initially estimated at \$755,767 with SCAQMD funding \$300,000, with the remaining \$455,767 cost-shared between AC Propulsion (\$355,767) and Comcast (\$100,000). Since the project was terminated without having completed vehicle demonstration, SCAQMD retained \$75,000 of the \$300,000 award.

Commercialization and Applications

Although the project was terminated without field demonstration, a prototype has been successfully tested by Comcast with positive feedback. AC Propulsion plans to continue development and refinement of the electric drive system with a goal to ultimately commercialize the system or its components.

April 2015

Develop and Demonstrate Class 8 Drayage Plug-In Hybrid Heavy-Duty Vehicle

Contractor

Volvo Technology of America & Volvo Group

Cosponsors

Volvo Technology of America, Inc. U.S. DOE SCAQMD

Project Officer

Joe Impullitti

Background

To attain federal ozone standards and to reduce the adverse health impacts of near-road emissions along freight corridors in the South Coast Basin, SCAQMD co-sponsors development and deployment of advanced clean cargo transport technologies.

Project Objective

The objective of this project was to develop, build and demonstrate a prototype Class 8 heavy-duty plug-in hybrid drayage truck with significantly reduced emissions and fuel use.

Technology Description

The truck features a 6x2 Mack chassis at 60,000 gross combination weight (GCW) with the proprietary hybrid driveline, a new energyoptimized battery, external charging interface and newly developed energy management and control systems suitable for port drayage application. Using hybrid trucks for drayage application (and other local and regional haul applications) can reduce emissions and lowers fuel use significantly. By utilizing plug-in hybrid technology, fully zeroemission electric mode is possible for limited distances at low speeds, such as in a predetermined zero-emission geofence. The integration of a plugin hybrid powertrain with downsized engine (11L in lieu of 13L), along with several improvements to the complete vehicle efficiency are expected to add up to approximately 30% improvement in fuel economy in a drayage cycle containing a mix of the driving patterns described in the report "Characterization of Drayage Truck Duty Cycles at the Port of Long Beach and Port of Los Angeles." Using clean electricity from the Southern California grid to externally recharge the hybrid battery and offset the least efficient operating points of the engine is also expected to result in approximately 30% reduction of greenhouse gas (GHG) emissions.

Status

The project delivered a working prototype plug-in hybrid truck along with a first evaluation of the efficiency and emission potentials of the technology. The project was completed in July 2015 with a final demonstration of the concept vehicle on a simulated drayage route around Volvo's North American headquarters in Greensboro, NC. The route included all traffic conditions typical of drayage operation in Southern California as well as geofences defined to showcase the zero-emission capabilities of the truck. The demonstrator successfully completed four consecutive trips with a gross combined vehicle weight (GCVW) of 44,000 lb., covering approximately 2 miles out of a total distance of 9 miles per trip in the Zero Emission (ZE) geofence. The final report is on file with complete technical details of the project. The only unanticipated problems encountered during the project were delays in the vehicle retrofit due to premature failures of critical prototype components, which required a 7-month no-cost extension to the original contract.



Demonstration Drayage Truck Loading a Container

Results

This vehicle is expected to use approximately 30% less fuel than a typical drayage truck in daily operation, and it is designed to allow full electric operation whenever operating in a marine terminal in the ports of Los Angeles / Long Beach.

This project took a well-to-wheels approach in order to estimate the greenhouse gas (GHG) emissions from drayage vehicles. The CO2 equivalent emissions from the grid power were obtained from the [eGRID] database. Since this vehicle is to be used in the Los Angeles Port area only, the values of CO2 equivalent emissions from the [eGRID] database are equal to 0.339Kg/KWH. The CO2 equivalent emissions from one gallon of diesel fuel are 12.725Kg/gallon. Based on these numbers we estimated that drayage PHEV usage will result in GHG emission reduction of approximately 25%, which is in line with the initial project goals.

Even though we weren't able to complete detailed simulations of tailpipe emissions for this concept truck, our general prediction is that the overall NOx output, measured in units of volume or weight per mile, will be reduced drastically but that the NOx emissions measured in g/bhp-hr may initially increase in such a PHEV as compared to a conventional vehicle. The overall emission reduction is a result of the much lower fuel use, but multiple factors can lead to a potential increase in brake specific emissions: the frequent restarts of the engine are a new challenge when it comes to controlling engine-out emissions, and cooling down of the engine and aftertreatment components during zero-emission operation can result in lower average NOx conversion levels in the SCR system; depending on how the hybrid driveline is controlled, the engine could operate in higher brake specific NOx output load points more frequently than the equivalent conventional powertrain.

Our future work will therefore focus on improving our analytical tools to better capture engine and exhaust aftertreatment component behavior under start-stop or low-speed conditions. We believe that this will help identify robust strategies to control the complex plug-in hybrid energy management algorithms in order to maximize the emissions and energy benefits of the vehicle compared to its baseline.

Benefits

This project demonstrates new complete-vehicle solutions that can offer significant benefits when applied to a specific vehicle application.

The customer truck data collection performed during this project to create a detailed drayage duty cycle with accurate altitude and performance metrics was critical to ensure that the system simulations could guide the selection of most suited concept and provide representative insight in emission reduction potential. We will be publishing this detailed duty cycle, along with observations and recommendations regarding improvement opportunities, to aid other projects focusing on improving the emissions and fuel use of drayage trucks in the ports of Los Angeles and Long Beach.

As a result of work performed in this project an invention was filed to the U.S. Patent Office: PCT/US2015/026009 (Weight based aerodynamic deflector control).

Project Costs

This project was completed on target with a total cost of \$2.4M as follows:

Funding Partner	Funding Amount	Funding Percent
SCAQMD	\$216,000	9%
U.S. DOE	\$984,000	41%
Volvo Technology of America, Inc.	\$1,200,000	50%
Total	\$2,400,000	100%

Commercialization and Applications

This project supported the submission in 2013 of a new proposed standard for charging interface of heavy vehicles: SAE J3068. The concept truck showcases components included in this proposal. The technical sub-committee had made significant progress at the time of writing of this report, with several key players represented in the area of electrification across North America.

May 2015

Demonstrate Full-Speed Battery Electric Vehicles

Contractor

South Bay Cities Council of Governments (SBCCOG)

Cosponsor

SCAQMD

Project Officer

Lisa Mirisola

Background

Achieving federal and state clean air standards, as well as reducing greenhouse gas emissions to meet climate action goals in Southern California, will require emission reductions from both mobile and stationary sources, passenger cars and light trucks that account for most of these emissions. New zero-emission technologies such as slow-speed Neighborhood Electric Vehicle (NEVs) and fullspeed Battery Electric Vehicles (BEVs) have been proposed to meet these sustainability goals and to reduce dependence on petroleum products used to fuel internal combustion engine (ICEs) vehicles. For many residents within the geographic boundaries of the SCAQMD, many trips and even commutes are relatively (five miles or less) local and can be accomplished with the replacement of an ICE vehicle with either an NEV or BEV into a household vehicle fleet.

Project Objective

This follow-on local-use vehicle (LUV) program entitled "Drive the Future" was intended to complement SBCCOG's NEV study through an examination of the household use and market of full-speed BEVs to residents, businesses and municipalities in the South Bay sub-region. The project objective was to answer these three questions:

- 1. Are BEVs sufficient to meet the mobility and transportation needs of South Bay residents?
- 2. Does the usage have the potential to produce significant environmental and economic benefits?
- 3. What policies and initiatives can accelerate the market for BEVs?

Technology Description

Battery electric vehicles are full-sized, freeway speed, zero-emission automobiles powered by a stored on-board battery pack; all BEVs are range limited by the size and number of the battery packs that are designed for each vehicle. The range of BEVs varies from the sub-category of slow-speed NEVs, that can travel up to 25 total miles per charge, to mid-range BEVs whose range is approximately 80 to 100 miles, to long-range BEVs with a range of greater than 200 miles. The BEVs tested in the study were mid-range and had approximately 80 miles of range.



One of four BEVs Used in Study

BEVs must be plugged-in to some sort of electrical outlet for recharging. All BEVs can be charged using a common household outlet – Level 1 (110v), as well as Level 2 (220/240v) outlets available through charging networks throughout the region. Some BEVs are also outfitted with an adaptor that allows for Level 3 (440 or DC fast charging). The time required to re-charge varies by type of charging with Level 1 taking the longest time; Level 2 about half as long as Level 1; and DC 3 fast charging significantly faster to charge than Level 2 (approximately 20 minutes to recharge from zero to eighty percent battery capacity.)

Status

The active demonstration phase of the project was completed in January 2015. There were four main activities: 1) preparation (leasing vehicles, arranging insurance, acquiring and installing GPS, recruiting, and selecting and training participants); 2) active demonstration (47 households drove a BEV for up to 2 months per household); 3) data processing and analysis (GPS generated a data point every minute each vehicle was "on" creating millions of geo-data points that were mapped, summarized in tables and interpreted); and 4) reporting. Unanticipated problems included occasional unreliability of the GPS system used to track some vehicles which led to changes in installation protocol; poorly maintained driver logs which required additional staff time to call drivers for interpretation; and complex travel patterns and destinations which required more staff time to interpret and analyze.

Results

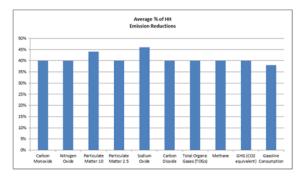


Table 1: Average Household BEV Emissions Reductions

The objectives did not involve any specific emissions reduction targets. However, emissions reduction per household is one outcome the project sought to measure; the resulting average household reductions in criteria pollutants and GHG emissions were high compared to reasonable expectations.

The study also revealed that the addition and use of a BEV to a household could meet most household mobility needs (including commuting to work). The NEV findings demonstrated that around 19% of household gas-powered vehicle miles traveled (VMT) could be replaced by an NEV. Because BEVs are longer range, they are able to account for 38% of household VMT. Aside from the relative difference in range as compared to their ICE vehicles, there were no performance tradeoffs in mobility.

Benefits

Immediate benefits include replacing 2,180 gallons of gasoline, reducing participants 'pump' costs by \$8,720, and reducing most pollutants by 40%.

Potential benefits include giving BEVs a high level of public exposure, while documenting environmental impacts and customer responses that can help make this vehicle market strategically attractive to original equipment manufacturers (OEMs) and policy makers.

Potential benefits also include expanding the BEV market in order for more households to reduce gasoline consumption, CO2, particulate matter, carbon monoxide and carbon dioxide emissions by up to 40% over current gas-powered vehicles.

Project Costs

Project costs totaled \$512,545, with SCAQMD's contribution at \$320,000.

	Actual Cost (Including in-kind by SBCCOG)	SCAQMD Project Budget
Total	\$512,545	\$320,000
Labor	\$385,112	\$190,452
GPS	\$16,000	\$16,466
Insurance	\$22,003	\$19,082
Vehicle Acquisition	\$85,796	\$94,000
Vehicle Unplanned	\$1,014	\$0
Other Expenses	\$2,620	\$0

 Table 2: Project Cost Breakdown

Commercialization and Applications

The SBCCOG will post the report on its website, make presentations to the electric drive industry, South Bay cities, and offer them to SCAG, L.A. Metro and governmental entities such as the Strategic Growth Council and the California Air Resources Board.

There are about 275,000 "secondary" vehicles driven by South Bay residents. Presenting viable options to replace them with BEVs or NEVs is the market target. To accomplish that, a public education initiative to "right size" vehicle choices is planned. SCAQMD Contracts #13418, et al.

December 2015

SoCalEV Ready EV Charger Installations

Contractor

Various SoCalEV partner organizations

Cosponsor

SCAQMD CEC

Project Officer

Patricia Kwon

Background

The Southern California Regional Plug-In Electric Vehicle Plan (SoCalEV) is a regional collaborative among cities, utilities, automakers, local and regional government agencies, businesses and others in the region who are actively engaged in and building the supporting necessarv infrastructure for the commercial launch of electric vehicles. The SoCalEV Ready project was funded by a CEC grant to deploy 319 Level 2 electric vehicle (EV) charging stations throughout the South Coast Air Quality Management District in all four counties. These chargers were deployed starting in 2013, with all installations completed no later than April 2016.

Project Objective

Under multiple contracts or memorandums of agreement (MOAs) executed with SoCalEV partners, these chargers are sited at local government agencies, universities, hospitals, and cultural destinations to create greater availability of public charging infrastructure. Installations were performed either by SoCalEV partners or contracted installers with experience in commercial installations. CEC funds were used for a portion of the costs associated with hardware and/or installation, and SoCalEV partners used their own funds as required cost sharing (39%) for the CEC grant to pay remaining costs. SoCalEV partners that completed their installations include the Cities of Claremont, Covina, Lake Elsinore and Palmdale; County of Los Angeles; California State University campuses at Fullerton, Long Beach, Los

Angeles, and San Bernardino; California Polytechnic Pomona; and University of California Irvine.



Figure 1: Los Angeles Zoo, DCFC and Level 2 EVSE



Figure 2: City of Palmdale Level 2 EVSE

Technology Description

EV charging stations were commercially available technology including Level 2 (240V) charging stations with SAE J1772 connectors and DC (480V) fast charging stations with CHAdeMO and SAE Combo connectors. These connectors worked with all of the EVs available on the market: all EVs can use the J1772 connector for Level 2 charging. Japanese EVs use the CHAdeMO connector while American/European EVs use the SAE Combo connector for DC fast charging.



Figure 3: Leo Carrillo State Park Level 2 EVSE

Status

The majority of installations have been completed by December 2015. SoCalEV partners are providing charger utilization data and documenting lessons learned on this project. CEC sent a program evaluator in November 2015 to visit a dozen sites to confirm charger performance and high level of utilization. The MOAs under this project are as follows:

SoCalEV Partner	Contract #
City of Claremont	13418
California State University Los Angeles	13419
University of California Irvine	13420
County of Los Angeles	13421
City of Santa Monica	14074
City of Covina	14095
University of California Santa Barbara	14153
Clean Fuel Connection, Inc.	14199
Cal State University San Bernardino	14201
City of Palmdale	14207
City of Lake Elsinore	14208
Cal State Polytechnic University Pomona	14209
Cal State University Long Beach	14210
Cal State University Fullerton	14236

Results

Data on the chargers is being collected and will be included in a final report to CEC due in April 2016. An example of charger utilization data provided by SoCalEV partners includes Table 1 below for chargers installed at California State University Los Angeles.



Table 1: Charger Utilization at CSULA

Benefits

This project was important in increasing the deployment of public charging infrastructure at a variety of locations. It has also assisted in making EV infrastructure more visible to the general public and significantly increasing the electric range of EVs to allow for longer and more frequent trips and vehicle miles traveled.

Project Costs

The CEC grant provided funding towards hardware and/or installation in the amount of \$840,750 with SoCalEV partners providing additional cost sharing in the amount of \$542,659. Total project costs were \$1,383,409. In addition to the 319 funded installations, SoCalEV partners took the opportunity to install additional Level 2 charging stations. Two DC fast charging stations were installed at the Los Angeles Zoo and Los Angeles International Airport through а partnership with Los Angeles Department of Water and Power and Adopt a Charger.

Commercialization and Applications

Level 2 and DC fast charging stations are fully available commercial technologies which have been and will continue to be deployed for a variety of purposes including residential, public, workplace, and destination charging. This deployment project assisted in accelerating the availability of public charging infrastructure which is much needed to go beyond the early adopter stage and have the technology embraced by the general public.

November 2015

Develop and Demonstrate Renewable Hydrogen Energy and Fueling Station

Contractor

Air Products and Chemicals, Inc. (APCI)

Cosponsors

California Air Resources Board FuelCell Energy, Inc. Orange County Sanitation District (OCSD) SCAQMD Southern California Gas Company U.S. Department of Energy

Project Officer

Joseph Impullitti

Background

The implementation of zero-emission vehicles is a key component in the effort to attain air quality standards in the South Coast Air Basin. The production and use of renewable hydrogen in fuel cell vehicles will be keys to meeting goals for reducing emissions of both criteria pollutants and greenhouse gases.

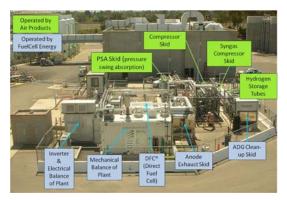
Project Objective

SCAQMD provided cost-sharing to augment U.S. DOE and CARB funding awarded to Air Products and Chemicals, Inc. (APCI) to construct, install and operate a first-of-a-kind Hydrogen Energy Station, which would use a high-temperature fuel cell to coproduce hydrogen and electricity generated from anaerobic digester gas at the Orange County Sanitation District (OCSD) facility in Fountain Valley, CA. Electricity would be returned to the host site, and hydrogen would be sent to a publicly accessible hydrogen fueling station. Development of the Hydrogen Energy Station which was deployed at OCSD was funded under a U.S. DOE Cooperative Agreement (DOE \$5,950,000, non-federal \$6,590,000), which included a stage-gate approach involving steps of concept feasibility, preliminary system design, and detailed engineering design/construction/shop validation.

Technology Description

Digester gas from the wastewater treatment plant is first cleaned and conditioned before being fed to the Hydrogen Energy Station, which incorporated FuelCell Energy's Direct Fuel Cell (DFC[®]) technology. The DFC[®] unit is a molten carbonatebased fuel cell system capable of simultaneously reforming hydrocarbon feedstocks to syngas (hydrogen, CO and CO₂), while producing power and process heat. The fuel cell is designed to produce 300 kW without hydrogen coproduction and 250 kW along with 100 kilograms per day of hydrogen.

The syngas produced by the DFC[®] is further processed into purified hydrogen using APCI's pressure swing adsorption process. Purified hydrogen is then supplied to the hydrogen fueling station, which includes compression and storage systems sized for the 100 kilograms per day production rate (which can serve 20 to 30 cars per APCI's proprietary fueling protocol (of dav). which four patents are cited in the SAE hydrogen fueling TIR J-2601) is utilized to cascade fill from the storage tubes to the vehicles. The station utilizes two dispenser hoses (one at H35/5,000 psi pressure and one at H70/10,000 psi pressure). The H70 gas is cooled to temperatures approaching -40 degree C so that refueling times of 3 to 4 minutes can be achieved.



Hydrogen Energy Station at OCSD

Status

SCAOMD joined the project in December 2009 during site engineering efforts. Site construction was completed in July 2010, and the Hydrogen Energy Station was shipped from FuelCell Energy's facilities in Danbury, CT, where the system had undergone over 8,000 of shop validation testing. Initial operation of the Hydrogen Energy Station on natural gas began on September 13, 2010, reaching a rate 300 kW net AC power on September 20, 2010, as part of the fuel cell's power conditioning process. The hydrogen purification system underwent its first test at 50% rates on September 23, 2010. The hydrogen fueling station was also installed in the fall of 2010, with the dispenser sited adjacent to an existing CNG dispenser located in the entry area to the OCSD facility. Commissioning of the hydrogen fueling station took place in March 2011, with the digester gas clean-up system installed in May 2011. Clean digester gas was first generated on May 25, 2011, and the three-year operating program was completed on May 31, 2014. At the same time auto manufacturers began rolling out their production fuel cell vehicles, SCAQMD and CARB determined there would be a strong need for hydrogen to support the fleet of new hydrogenpowered vehicles so the two agencies pooled their funding to continue operating the station, using delivered hydrogen, through September 2015. Using funding from other sources APCI will continue its operation serving fuel cell vehicle customers through October 2016.

Results

Power quality issues were encountered at the site from the initial commissioning of the Hydrogen Energy Station through early 2012; these were resolved as a result of efforts by OCSD and the National Fuel Cell Research Center at the University of California, Irvine (UCI), which was responsible for data analysis and education and outreach under the CARB program.

Other key performance results include efficiency (greater than the target value of 50%), performance of the digester gas clean-up system (no breakthrough of contaminants to the fuel cell), and emissions at 5% of the 2007 CARB limit for NOx and < 1% of the limit for CO. Use of the hydrogen fueling station increased over time, reaching an average of 5 fueling events per day in early 2014. This average continued through the end of the project, with 860 fueling events from July to November 2015.



Benefits

Deployment of fuel cell electric vehicles (FCEVs) is a key element toward achieving goals to reduce levels of criteria pollutants in the South Coast Air Basin. Manufacturers of FCEVs have provided survey figures to state agencies indicating their plans to deploy tens of thousands of light-duty cars into the South Coast Air Basin in the 2015-2107 timeframe. In order to meet this goal, reliable hydrogen fueling stations are needed to provide confidence to automakers and their potential customers. Local, reliable sources of renewable hydrogen will be needed to meet state requirements for renewable energy content, and demonstrations of technologies such as the Hydrogen Energy Station are necessary to provide operating data for scale-up to MW scale power production with its corresponding hydrogen coproduction that are expected to achieve the target economics for both major products.

Project Costs

Original project costs were \$8,436,735, as follows: CARB, \$2,700,000; U.S. DOE, \$2,077,284; SCAQMD, \$750,000 (9%); FuelCell Energy, \$51,979; and APCI, \$2,857,472. However, CARB and SCAQMD augmented this funding (\$200,000 and \$75,000, respectively) to continue station operation through November 2015 under this contract.

Commercialization and Applications

Demonstration testing of fueling station equipment and novel hydrogen production systems at relevant usage rates is critical to gain the learnings necessary for rollout of hydrogen refueling infrastructure to the general public. In addition, APCI and FuelCell Energy are seeking to develop project opportunities to utilize the next product platform for the molten carbonate fuel cell (1.4 MW) which could be configured for hydrogen coproduction.

January 2015

Maintenance and Data Management for the SCAQMD Hydrogen Fueling Station

Contractor

Hydrogenics Corporation

Cosponsor SCAOMD

Project Officer

Larry Watkins/Lisa Mirisola

Background

The implementation of zero-emission vehicles (ZEVs) and related infrastructure is a key component in the effort to achieve healthful air quality in the South Coast Air Basin. Fuel Cell Vehicle (FCV) technology is emerging at an accelerated pace and related hydrogen fueling infrastructure will play a crucial role in this effort

Originally constructed by Stuart Energy, the subject fueling station produced hydrogen from onsite electrolysis and has been operational at SCAQMD in Diamond Bar, CA, since 2004. Hydrogenics Corporation (Hydrogenics) acquired Stuart Energy in 2005 and took responsibility for station maintenance.

Project Objective

Hydrogenics maintained the hydrogen fueling station in Diamond Bar, California (see Fig. 1) to provide 5,000 psi (350 Bar) hydrogen for hydrogen-fueled Prius vehicles developed under the Five-Cities demonstration project 04185 which has been completed, as well as fuel cell vehicles from Honda, Mercedes, and Toyota used in SCAQMD's demonstration fleet.

Technology Description

The station was designed to produce 24 kg/day, with storage at 6250 psi. Hydrogen was dispensed from an FTI International Group, Inc. dispenser by SCAQMD staff and other drivers trained by Stuart and/or Hydrogenics. Access was controlled by PIN codes.

Status

This contract term was 10/30/09 to 1/31/15. Maintenance and management services included 1) Train designated SCAQMD staff in the proper use of the fueling dispenser, card-lock system and vehicle fueling procedures; 2) Repair unsafe or inoperable equipment or parts of the fueling system as needed; 3) Provide fueling and summary station use reports.

The station was decommissioned in 2014, and all above-ground equipment was declared obsolete and/or compressor oil contaminated and removed by Hydrogenics, except for two items which SCAQMD designated for reuse. The FTI dispenser was provided at no cost to Sunline Transit to use as spare parts for the only other remaining identical FTI dispenser known to SCAQMD to extend the life of their fueling station. The hydrogen storage tubes were retained at SCAQMD in the hopes that they could be reconditioned and reused for upgrading our CNG station.



Figure 1: Hydrogen Station at SCAQMD

Results

From 2005 through 2013, this hydrogen station was used a total of 3223 times and dispensed a total of 4,035 kilograms (+/- 10%) of hydrogen. Maintenance of the stations was manageable and rarely caused disruption to the passenger vehicle users. Annual usage was reported 2009 - 2013 (see Table 1).

Year	H2 Dispensed (Kg)	Fills
2009	465	362
2010	97	74
2011	166	137
2012	122	87
2013	81	57
TOTAL	931	717

Table 1: Hydrogen Dispensed 2009 - 2013

In 2010, an electrical panel malfunction resulted in shutdown of the station, with no injuries. As a precaution, hydrogen pressure in storage was slowly reduced to about 200 psi, but no other damage was found in the system. The manufacturer of the gas control panel had gone out of business. However, Hydrogenics manufactured control panels superior to the defunct panel and installed one at SCAQMD.

The production capacity of the electrolyzer was reduced to about 12 kg/day in 2010 to extend the life of the fueling station until the SCAQMD site was scheduled for upgrade.

Benefits

This station was recognized by CARB as the first station in Southern California designed for passenger cars on the new hydrogen highway network in California.

This project was an important step toward the use of renewable energy sources, particularly hydrogen. The installation of the station allowed SCAQMD to monitor the fueling patterns and witness how a hydrogen fueling station is maintained. The project provided important lessons learned on station operation and maintenance costs which can be applied to future commercial stations serving light-duty FCVs.

Project Costs

The total cost of this contract was \$468,000, fully funded by the Clean Fuels Fund. Some in-kind costs were absorbed by Hydrogenics.

Commercialization and Applications

This hydrogen fueling station was designed to support a small fleet of vehicles (fewer than 10 cars) operating at 350 bar tank pressure. The current generation of FCVs requires 700 bar hydrogen pressure to achieve the desired range for consumer acceptance.

Deployment and operation of this station with others in California led to greater commitments of FCVs, with additional public funding for hydrogen stations in California.

Hydrogenics is a member of the California Fuel Cell Partnership and has over 60 years of experience designing, manufacturing, building and installing hydrogen systems. Hydrogenics recently supplied a new 65 kg/day electrolysis system with project partners for CSULA (see Fig. 2).

Further reduction in cost and additional technical improvements are needed to scale-up hydrogen fueling as additional fuel cell vehicles are introduced.

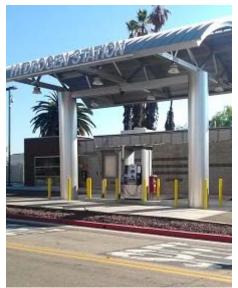


Figure 2: Hydrogen Produced with Hydrogenics Electrolysis System at CSULA

March 2015

"Five Cities" Program to Demonstrate Hydrogen Fueling Station Operation and Maintenance

Contractor

Air Products and Chemicals, Inc. (APCI)

Cosponsor SCAOMD

Project Officer

Larry Watkins/Patricia Kwon

Background

The implementation of zero-emission vehicles (ZEVs) is a key component in the effort to achieve healthful air quality in the South Coast Air Basin. Fuel Cell Vehicle (FCV) technology is emerging at an accelerated pace and related fueling infrastructure will play a crucial role in this effort.

Project Objective

Under Contract #05165, SCAQMD allocated a total of \$3.89 million towards funding the "Five Cities" Program for the installation and operation of a network of five hydrogen fueling stations throughout the Basin to support the operation of FCVs and electric-hybrid internal combustion engine vehicles converted to use hydrogen as the fuel. Contract #13259 extended the Program to support continued operation and maintenance.



Figure 1: Santa Ana Mobile Fueler Station



Figure 2: Riverside Electrolyzer Station

Technology Description

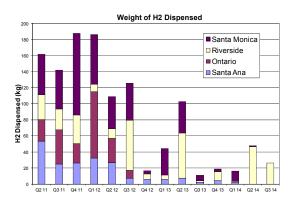
During the initial five-year period of performance, Air Products designed, built and installed stationary fueling sites supplied by an integral proton exchange membrane (PEM) electrolyzer system for Riverside, Burbank and Santa Monica, and a self-contained, transportable fueling unit that was refilled at an APCI hydrogen production facility for the Santa Ana and Ontario sites. These stations were supplied in support of the SCAQMD "Five Cities" Program to fuel hydrogen ICE and fuel cell vehicles in the South Coast Air Basin.

Status

The Burbank station concluded its participation in the demonstration program in 2009 as part of a station upgrade and was not included under this maintenance and operation contract; however, it continues to operate today under another operator. The mobile fueler in Ontario completed participation in 2012 and the mobile fueler in Santa Ana in May 2014. The stations at Santa Monica and Riverside completed participation in 2015. A station is planned at a retail location within two blocks of the Santa Monica site and recent plans were announced to upgrade the Riverside station.

Results

From March 2011 through September 2014, the hydrogen fuel stations were used a total of 885 times and dispensed a total of 1,267 kilograms (+/-10%) of hydrogen. Maintenance of the stations was manageable and rarely caused disruption to the users.



H2 Dispensed Mar2011-Sep2014

Benefits

This project was an important step toward the use of renewable energy sources, particularly hydrogen. The installation of the projects allowed SCAQMD to monitor the fueling patterns at each of the sites and witness how a hydrogen fueling station is run. The projects have successfully demonstrated the use of electrolysis, which if supplied with a renewable source of electricity, is a clean way to produce hydrogen. The project provided important lessons learned on station operation and maintenance costs which can be applied to future commercial stations serving lightduty FCVs.

Project Costs

The total contract value, fully funded by the SCAQMD, for this follow-on maintenance and operation contract to provide continued support of the "Five Cities" Program was \$390,000. No additional costs beyond hydrogen delivery costs (for the Santa Ana station) and station maintenance costs (for Riverside and Santa Monica) were encountered.

Commercialization and Applications

The stations in the "Five Cities" Program were all designed to support small fleets of vehicles (less than 10 cars) operating at 350 bar tank pressure. The current generation of FCVs requires 700 bar hydrogen pressure to achieve the desired range for consumer acceptance. Station designs have been developed using both delivered hydrogen *and* onsite production via electrolysis that dispense at 700 bar and provide a renewable fuel to the customer.

Deployment and operation of the Stations led to greater acceptance of FCVs as demonstrated by upgrades or additions of 700 bar hydrogen stations.

Given the challenges for deployment of earlymarket light-duty vehicle fueling infrastructure, the "Five Cities" Program provided important lessons learned on station costs, production/supply modes and customer feedback. Public and private stakeholders have used this information to develop follow-on plans for the future which include the rollout of 100 hydrogen fueling stations in the California market over the 2013-2023 timeframe.

December 2015

Develop Hydrogen Network Investment Plan and Assess Policies and Incentives for Implementation

Contractor

Energy Independence Now (EIN)

Cosponsors

SCAQMD Energy Foundation CARB California Fuel Cell Partnership Toyota Emmett Foundation Andrew Sabin Family Foundation Daimler Patagonia

Project Officer

Larry Watkins & Patricia Kwon

Background

Hydrogen fuel cell electric vehicles (FCEVs) represent a crucial component of the State of California's strategy to meet federal air quality standards and state zero emission vehicle and greenhouse gas (GHG) emissions targets.¹ The substantial emissions benefits associated with FCEVs can only be realized if sufficient hydrogen fueling infrastructure is available to support these vehicles.

EIN, in partnership with SCAQMD, embarked on a project to develop a Hydrogen Network Investment Plan (H2NIP) in order to examine market success factors relative to the looming launch of FCEV vehicles and support infrastructure. The project was broken into two phases. Phase I focused on precommercial market dynamics relating to infrastructure and Phase II focused on fuel incentives and market dynamics for renewable hydrogen.

Phase I Project Objectives

This phase was created to develop a consensus-based H2NIP that delineates key actions needed to facilitate a successful market launch of hydrogen

FCEVs. The goal was to create a common platform for stakeholders to identify, demonstrate and justify options to optimize incentives for hydrogen fueling stations as well as establish network level policies to ensure stations remain open and growth can be sustained.

Phase I Status

The final version H2NIP was completed in October 2013. It is publically available on EIN's website and is currently serving as a resource for multiple state agencies.²

Phase I Results

The H2NIP establishes a baseline understanding of current pre-commercial market dynamics. As an example, Figure 1 below illustrates market risk assumed by the first 68 fueling stations. If these baseline stations were in place by 2017, and FCEV market uptake is slow (1/4 of CARB's ZEV Likely Compliance Scenario is shown here), many stations would be under-utilized for years – a recipe for sustained negative cash flows.

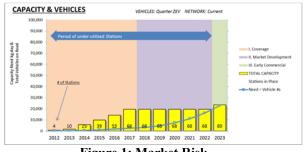


Figure 1: Market Risk

The baseline understanding of the current market serves as the foundation for a series of 15 recommendations aimed at overcoming the challenge associated with deploying a new infrastructure system. Critical near-term recommendations focus on building marketplace certainty and providing the risk protection needed to motivate early market investment to establish the baseline coverage network.

¹ See US Clean Air Act, California's Global Warming Solutions Act (AB 32), CARB's ZEV Regulation, and Executive Order B-16-2012

² http://www.einow.org/images/stories/factsheets/h2nip_f ull_paper_final.pdf

In addition to the recommendations established in the H2NIP report, EIN developed a robust Microsoft Excel-based H2NIP Model to test the impact of a variety of incentives and market scenarios on a station investor's (both public and private) bottom line.

Phase I Costs

A small portion of funding from Phase I to develop the H2NIP were carried over to fund the beginning of the implementation phase. Approximately \$10K of this funding was deployed at the end of 2012. This funding matches what EIN planned at the onset of the project.

Phase I Cost-Share (Actual)		
SCAQMD	\$50K	
Energy Foundation*	\$27K	
CARB	\$25K	
CaFCP	\$25K	
Toyota	\$25K	
Emmett Foundation*	\$20K	
Daimler	\$15K	
Sabin Foundation*	\$15K	
Patagonia*	\$8K	
Total	\$210K	
*EIN Donors		

Phase II Project Objectives

This phase was created to develop an assessment of fuel incentives and renewable hydrogen in California that delineates findings on hydrogenrelated environmental credits, outlines key actions needed to further develop California's Low Carbon Fuel Standard (LCFS) and U.S. EPA's Renewable Fuel Standard (RFS) incentives and to highlight context, concern and drivers for the renewable hydrogen market. LCFS program credits are issued to promote a 10% reduction in carbon intensity of the state transportation fuel mix by 2020, while RFS credits are issued to renewable fuel producers to reduce GHG nationwide.

Phase II Status

The final version of the plan, 'Crediting Hydrogen: Fuel Incentives and Renewable Hydrogen Investment in California' was completed in November 2014. It is publically available on EIN's website and is currently serving as a resource for multiple state agencies.³

³ http://www.einow.org/images/stories/factsheets/ein_cre ditinghydrogen.pdf

Phase II Results

EIN worked to investigate the current barriers and opportunities associated with the LCFS credits and renewable hydrogen requirements (SB 1505) and propose recommendations to the hydrogen and fuel cell community on ways to address them.

Work included the briefing paper 'Crediting Hydrogen: Fuel Incentives and Renewable Hydrogen Investment in California'; presentations highlighting findings and eliciting feedback and input on priorities, including detailed financial analysis of the projected values of LCFS credits, as described in the CaFCP 2014 work plan; and meetings to discuss findings and the viability of options to facilitate LCFS and SB 1505 streamlining.

The ultimate outcome is two-fold: 1) EIN provided hydrogen stakeholders with appropriate information to capture a full range of monetary benefits that are currently available to them through the LCFS program, and 2) EIN provided an assessment of the current and future impacts of the renewable hydrogen requirements and explored alternative options to better incentivize renewable hydrogen investments.

Ultimately, further research into renewable hydrogen pathways, economics and incentive structures is necessary in order to establish and validate viable actions that stakeholders can take to ensure that the FCEV community maximizes reductions in carbon emissions and other pollutants with adverse impacts to public well-being. This work is of critical importance in the developmental phase of support infrastructure.

Phase II Costs

The table below represents the cost-share EIN used to perform Phase II. This funding matches what EIN planned at the onset of the project phase.

Phase II Cost-Share (Actual)		
SCAQMD \$80K		
CaFCP	\$20K	
Toyota \$25K		
Total	\$125K	

May 2015

CSULB Student Educational Project to Demonstrate Graphene Fuel Cell Catalysts

Contractor

California State University, Long Beach (CSULB) Foundation, Center for Energy and Environmental Research and Services (CEERS)

Cosponsors

SCAQMD

Project Officer

Alfonso Baez

Background

Proton exchange membrane fuel cells (PEMFC) convert hydrogen to electricity efficiently, with water as their main waste product. Their small size and low operating temperature (~70-85°C) make PEMFCs ideal for automotive applications, replacing the engine. They could also be used in larger stationary or locomotive applications. Two materials that are challenges for this technology to realize commercialization are: platinum (Pt) catalysts and Nafion PEMs. Both materials are high cost and have durability issues. In addition, the performance of the Pt catalyst needs to be improved to realize greater conversion efficiency in PEMFCs. The major motivation for this study was to find dramatically less expensive cathode catalysts for PEMFC than pure Pt, while maintaining or improving the high performance for the Oxygen Reduction Reaction (ORR) exhibited by Pt.

Previous studies have examined the performance of the ORR by replacing Pt with a non-Pt catalyst. An example would be to replace Pt by palladium (Pd) alloys. The studies found that the Pd alloy catalysts performed better than pure Pd. However, their performances are still worse than Pt. Another strategy is to replace Pt with a Pt alloy that contains nickel (Ni) or cobalt (Co). Pt3Ni and Pt3Co are found to have improved ORR performance over pure Pt while reducing the Pt loading by 25%. However, these catalysts suffer from durability issues, as it was found that the Co or Ni leach into the fuel cell electrolyte during operation.

For PEMFC to become commercially available, it would need an ideal ORR catalyst with improved performance, lower cost, and improved durability.

The iodine-edged graphene catalysts can potentially fill this role as the catalysts were found to have 33% higher current than Pt catalysts. These catalysts maintained 85.6–87.4% of their initial current after 10,000 cycles compared to 62.5% for Pt electrodes when tested in an alkaline environment. Thus, further research to test these catalysts in a complete fuel cell system is much needed to demonstrate improved performance and durability.

Project Objective

The objective of the project was to investigate the performance of iodine-edged graphene catalysts for PEMFC under operating fuel cell conditions and compare the results with the performances of the traditional catalysts.

The followings tasks were followed to meet the objectives of the investigation. Each task was broken up into one of three categories: Catalyst Synthesis, membrane-electrode assembly (MEA), and Simulation.

Task 1 - Synthesis of iodine-edged graphene catalysts (Catalyst Synthesis) and Perform ORR binding energy calculation of iodine-edged graphene catalysts.

Task 2 - Construct individual MEA with Pt and with iodine-edged graphene catalysts.

Task 3 - Perform ORR barrier calculation of iodineedged graphene catalysts.

Task 4 - Assemble and test complete fuel cells with both Pt and iodine-edged graphene catalysts.

Task 5 - Propose atomistic model on the chemical advantage of iodine-edged graphene catalysts.

Task 6 - Use the insights gleaned from the atomistic model to improve experimental results.

Task 7 - Data assessments. Submission of the draft final report.

Technology Description

All experiments were performed in the chemical engineering laboratory at CSULB. Iodine-edged graphene catalysts were synthesized from graphene oxide and iodine purchased commercially. They were incorporated into a Membrane Electrode Assembly (MEA) consisting of catalyst, carbon and Nafion. The MEA was placed into a fuel cell stack assembly where H2 and O2 gas reacted electrochemically. The current and voltage were recorded to determine the efficiency. The experiments were also performed for a standard PEMFC with Pt catalysts. This part of the investigation provided the baseline data for comparing the new catalysts to the existing commercial catalysts.

Density functional theory (DFT) calculations were performed to calculate the binding energy of ORR species (O, O2, OOH, H2O, OH) on iodine-edged graphene catalysts. In addition, the barriers of the ORR were calculated to compare the theoretical performance of these catalysts versus Pt, which was previously calculated. This provided an atomistic understanding on how and in what environment the iodine-edged graphene catalysts perform better than Pt.

Status

The project has been completed and the final report was submitted in May 2013. There was one final batch of catalyst still untested.

Results

Commercially available Pt and graphene catalysts from Fuel Cell Etc were tested to obtain the baseline data. CSULB group also manufactured a Pt and six graphene membrane electrode assemblies (MEA), the latter with different compositions, to compare outputs with the baseline data. All MEAs were tested under three different conditions; open circuit, 1 mA and 10 mA loadings. Results show a maximum of 0.35 volts for the CSULB MEA as compared to a slightly higher than 0.7 volt for the commercially available MEA.

X-ray diffraction was used to analyze the synthesis. The sample consists of 100% graphite initially, and should not have contained any graphite after the synthesis. The first sample contained a large graphite peak. The performance was poor. Afterwards, the ball-mill time was increased to 14 days, which made the sample better. Still, the performance was not as good as the collaborator's. Finally, for sample #3, a new ball mill with RPM of 1500 was purchased. This was able to remove all graphite peaks.

The binding energy of various ORR intermediates on graphene was calculated. In addition to calculating the binding energy of these species on bare graphene, the possibility of oxygen as a species underneath to see how it will affect the binding energy was investigated. Table 1 provides the binding energies.

Binding Energy (eV)	0	ОН	OOH	00	H ₂ O
Oxidized Graphene	2.02	2.25	0.22	unstable	unstable
Graphene	0.86	0.49	unstable	unstable	unstable
Pt	3.68	2.28	1.52	1.28	0.22

Table 1: Calculated binding energy of
graphene and graphene-O. Comparison is
made of binding energy of previously
calculated results for Pt.

The data shows that the binding energy is greatly facilitated by O species on the underside. This theory explains a couple of phenomenon found in graphene fuel cells:

1. It explains why graphene is needed as a catalyst rather than normal graphite. Because graphite only allows binding on one side, the other side is not exposed to oxygen, which will enhance binding and lead to catalytic activity.

2. Graphene type fuel cells typically work better in basic conditions vs. acidic. This explains why a base environment is advantageous, because base will not dissolve oxides, which seems to facilitate the fuel cell reaction.

The graphene fuel catalyst results showed a lower voltage than Pt. This was explained by the acidic environment of the PEMFC tested, which are incompatible with graphene catalysts.

Benefits

Compared to platinum, graphene and iodine are both abundant materials. If the potential of this catalyst could be realized in a complete fuel cell system, the cost of fuel cells would decrease significantly, resulting in improved commercialization of fuel cell technology and reduction in ambient air pollution.

Project Costs

The project was completed with funding from the SCAQMD for \$28,000 and cost-share contributions in the form of space and laboratory equipment and additional person-hours.

Commercialization and Applications

Further steps are required to refine the manufacturing process and improve the performance of the graphene and iodine catalyst, before commercialization. Strategies need to be developed at the atomic level to dope the graphene, so that the intermediate OOH species can be stable in an acidic environment, where there are no adsorbed oxides.

October 2015

Develop Sampling and Testing Protocols for Analyzing Impurities in Hydrogen

Contractor

University of California, Irvine

Cosponsor

SCAQMD

Project Officers

Raul Dominguez, Rudy Eden & Lisa Mirisola

Background

Hydrogen is an alternative transportation fuel that is expected to play a role in reducing both fossil fuel usage and air pollutants including greenhouse gases (GHGs). The SCAQMD is committed to the promotion and facilitation of alternative fuel usage including hydrogen in support of its mission to attain healthy air in the Los Angeles basin. Use of hydrogen as a motor vehicle fuel requires the ability to verify that the fuel can satisfy SAE J2719 and the California Code of Regulations (CCR), Title 4, Division 9, Chapter 6, Article 8, Sections 4180-4181 – Hydrogen fuel quality requirements.

Project Objective

SCAOMD sought to demonstrate the ability of measuring contaminants in hydrogen to the specifications defined in SAE J2719 and the CCR by identifying analytic instrumentations and demonstrating their ability to meet hydrogen vehicle fuel quality measurement requirements. Work under this contract was to identify and develop several methods to determine and quantify "trace contaminants" present in hydrogen intended as an alternative transportation fuel for motor vehicles. The challenge is to detect contaminants at the concentrations specified in the SAE J2719 and the CCR. The three primary targeted tasks under the contract were: 1) to evaluate existing analytical methodologies and instrumentation available at the University of California Irvine (UCI) for suitability by analyzing some of the "trace contaminants" (H₂O, CO, CO₂, THC, TH, NH₃, HCOOH, and TS) listed in SAE J2917 and the CCR for hydrogen automotive fuel (proof of concept); 2) to

investigate alternative technologies and instrumentation to perform analysis of trace contaminants in hydrogen fuel, including cavity ring-down spectroscopy (CRDS), proton transfer reaction-mass spectrometry (PTR-MS) and/or other technologies; and 3) to develop and submit recommendations on instrumentation needed to establish a hydrogen fuel test center and develop standard operating procedures (SOPs) for sample collection and analytical methods.

Technology Description

Formaldehyde was collected with a DNPH cartridge and analyzed with high-performance chromatography (HPLC). liauid Extensive chamber study (at UCI) and a field study (at CSULA) demonstrated the success in determining formaldehyde to the required concentration stipulated in SAE J2719 and the CCR. Multiple sampling times and flow rates were tested. The two most ideal sampling times and flow rates found were 120 minutes with a flow of 1 L/min hydrogen or 80 minutes with a flow of 1.5 L/min hydrogen. Although formaldehyde was not found in the H₂ from the CSULA fueling station, chamber studies suggest that this methodology satisfies the SAE J2719 and CCR requirements.

Proof of concept was established by collecting hydrogen on August 29 and September 3, 2014, at the Newport Shell station and analyzing trace contaminants with existing analytical methodologies and instrumentation available at UCI. Over the two days, multiple samples were collected using the hydrogen quality sampling adapter (HQSA), which was interfaced with stepdown regulator to collect smaller canisters. Also, an ammonia (NH₃) cartridge developed by Professor Barbara Finlayson-Pitt's group was used to collect and determine the NH₃ content in the same H₂ fuel. The NH₃ trapped in the cartridge was analyzed with ion-chromatography (IC). Professor Donald R. Blake's non-methane hydrocarbon (NMHC) system [consisting of five columns/detectors (two FIDs - Flame Ionization Detectors, two ECDs - Electron Capture Detectors, and a MS - Mass Spectrometer) in three-gas chromatographs (GCs)] was used to determine

total hydrocarbons (THC) and halogenated hydrocarbons (TH).

Results

On average, H_2 from the Newport station consisted of approximately 407 part-per-trillion (ppt) of TH (particularly perchloroethylene), 539 ppt of THC (particularly toluene) and 3 ppb of NH₃. Also, during the sampling procedure, high water content was observed. However, water could not be quantified with instrumentations used at the time. The analysis demonstrated that existing analytical methodologies and instrumentations available at UCI were capable of measuring some of the target analytes required by SAE J2719 and the CCR.

Demonstration of the proof of concept initiated the second task, which is to investigate the suitability in using other instrumentations and technologies to determine other contaminants in hydrogen (such as carbon monoxide (CO), carbon dioxide (CO₂), methane (CH₄), formaldehyde and water). PTR-MS and fourier transform infrared spectroscopy (FTIR) were two alternative technologies investigated under this phase of the contract. As an alternative technology, DNPH cartridge sample collection followed by HPLC analysis was used to analyze formaldehyde in H₂. Commercially available CRDS was another technology proposed for investigation; however, a functional CRDS was unavailable, therefore, analysis for total sulfur (TS) using CRDS could not be performed.

PTR-MS is one of the alternative technologies used as a real-time VOC analyzer. The results indicated that PTR-MS, without modification, cannot be used to analyze VOCs under high H₂ content via hydrogen fuel. A pre-concentrator, such as a Markes International or Entech thermal desorber, could be used to pre-concentrate fuel contaminants (e.g. VOCs) and remove excess H₂ prior to PTR-MS analysis. On the other hand, FTIR used as a competing alternative technology successfully determined the CO, CO₂, and CH₄ concentration and satisfied SAE 2719 and CCR requirements. Detailed analysis and validation using FTIR from MKS Instruments were conducted under this contract.

The following table summarizes measurement objectives as defined in SAE 2719 compared to actual measurements under this contract.

Constituent	Limits	J2719 Minimum Analytical Detection Limit	Contract #15020 Determined Detection Limit
Water	5	0.5	0.12
Total hydrocarbons (C ₁ basis)	2	0.1	0.1
Carbon dioxide	2	0.1	0.1
Carbon monoxide	0.2	0.2	0.01
Formaldehyde	0.01	0.01	0.01
Ammonia	0.1	0.1	0.02

Benefits

The SCAQMD or other entities can perform analysis of "trace contaminants" in H_2 fuel to satisfy the criteria in SAE J2719 or the CCR.

Project Costs

SCAQMD provided full funding totaling \$114,500 from the Clean Fuels Fund for this contract.

Commercialization and Applications

Contract outputs included a list of instrumentations and associated vendors needed to satisfy the requirements listed in SAE J2719 and the CCR. The deliverables include standard operating procedures (SOPs) and Operation Assistance Guides for the HQSA, FTIR, NMHC system, DNPH cartridge and NH₃ cartridge usage. The final report also recommends further investigations to determine the feasibility of analyzing other contaminants listed in SAE J2719 such as helium, nitrogen and particulate matter in motor vehicle grade hydrogen.

December 2015

Participate in California Fuel Cell Partnership for CY 2015 and Provide Support for Regional Coordinator

Contractor

Bevilacqua-Knight, Inc.

Cosponsors

- 7 automakers; 6 government agencies;
- 1 technology provider;
- 8 associate members; and
- 14 affiliate members

Project Officer

Lisa Mirisola

Background

Established with eight members in 1999, the California Fuel Cell Partnership (CaFCP) is a collaboration in which private and public entities are independent participants. It is not a joint venture, legal partnership or unincorporated association. Therefore, each participant contracts with Bevilacqua-Knight, Inc. (BKi) for their portion of CaFCP administration. SCAQMD joined the CaFCP in April 2000, and the CaFCP currently includes 36 organizations interested in demonstrating fuel cell vehicle and fueling infrastructure technology.

Project Objectives

Several key goals for 2015:

- Convene CaFCP members and stakeholders in a common forum to discuss challenges and opportunities, exchange experiences and knowledge, and advance group sharing and progress. Build and expand trust among members via open communication. Maintain and enable the organization to achieve its mission and goals.
- Collaborate to identify and address emerging challenges and translate into comprehensive and durable solutions. Retain the flexibility to address issues quickly as they arise, in the interest of advancing all members and industry.

• Communicate, educate, inform and promote H2 & FCEVs benefits and opportunities to key outside stakeholders and general public for increased and continued support. Become readily recognized as the face of the industry for trustworthy information and assistance.

Status

The members of the CaFCP intend to continue their cooperative demonstration efforts and have set goals through 2016, subject to a budget approved annually. This final report covers the SCAQMD Contract #15666 for 2015 membership. This contract was completed on schedule.



Representatives from BAE Systems and Ballard talk with staff of Orange County Transportation Authority and other transit agencies during CaFCP-organized tour of four fuel cell electric buses under construction at El Dorado facility in Riverside.

Technology Description

The CaFCP members together or individually are demonstrating fuel cell passenger cars and transit buses and associated fueling infrastructure in California. The passenger cars include Daimler's B Class F-CELL, GM's Chevy Fuel Cell Vehicle, Honda's Clarity FCX and FCV, Hyundai's Tucson, Nissan's XTrail, Toyota's Mirai and FCHV-*adv* and VW/Audi's Golf Sportwagen HyMotion and A7 h-tron. The fuel cell transit buses include 12 placed at AC Transit (Van Hool buses with UTC fuel cells) and 4 placed at Sunline Transit (1 Ballard/New Flyer and 3 Ballard/BAE/ElDorado).

Results

Specific accomplishments include:

- Automotive members placed over 500 fuel cell passenger vehicles on California roads from 1999 through 2015, including the first retail customers starting in 2005;
- Transit agency members have demonstrated 28 fuel cell buses since 1999, with 19 currently in operation (see technology description);
- There are six retail and six other public hydrogen fueling stations in operation in California. There are also 40 in development in California;
- CaFCP staff and members continue to train local fire departments and work with emergency response organizations to coordinate with state and national efforts;
- CaFCP, the Governor's Office of Business and Economic Development and the California Energy Commission, continue briefing city staff across the state of California to optimize station permitting.
- CaFCP, GO-BIZ, CEC and others, hosted briefings and permitting workshops across the state for local government staff and elected officials.

Benefits

Compared to conventional vehicles, fuel cell vehicles can offer zero or near-zero smog-forming emissions, reduced water pollution from oil leaks, higher efficiency and much quieter and smoother operation. If alternative or renewable fuels are used as a source for hydrogen, fuel cell vehicles will also encourage greater energy diversity, lower greenhouse gas emissions (CO₂) and lower criteria emissions.

By combining efforts, the CaFCP can accelerate and improve the commercialization process. The members have a shared vision about the potential of fuel cells as a practical solution to California's environmental issues and similar issues around the world. The CaFCP provides a unique forum where technical and interface challenges can be identified early, discussed, and potentially resolved through cooperative efforts.

Project Costs

Auto members provide vehicles, the staff and facilities to support them. Energy members engage in fueling infrastructure activities. The CaFCP's annual operating budget is about \$2 million, and includes facility operating costs, program administration, joint studies and public outreach and education. Each member makes an annual contribution of approximately \$85,000 towards the common budget. Some government agencies contribute additional in-kind products and services. SCAQMD provides an additional \$50,000 annually to support a Southern California Regional Coordinator and provides office space for additional staff in-kind at SCAQMD. SCAQMD's contribution for 2015 was \$134,800.

Commercialization and Applications

While research by multiple entities will be needed to reduce the cost of fuel cells and improve fuel storage and infrastructure, the CaFCP can play a vital role in demonstrating fuel cell vehicle reliability and durability, fueling infrastructure and storage options and increasing public knowledge and acceptance of the vehicles and fueling.

From 2013 to 2016, CaFCP's goals relate to Preparing for Market Launch through coordinated individual and collective effort. During this fourth phase, CaFCP members, individually or in groups, will focus on important goals.

- Prepare for larger-scale manufacturing, which encompasses cost reduction, supply chain and production.
- Work on the customer channel, including identifying and training dealers and service technicians.
- Reduce costs of station equipment, increase supply of renewable hydrogen at lower cost, and develop new retail station approaches.
- Support cost reduction through incentives and targeted RD&D projects.
- Continue research, development and demonstration of advanced concepts in renewable and other low-carbon hydrogen.
- Provide education and outreach to the public and community stakeholders on the role of FCEVs and hydrogen in the evolution to zero-emission electric drive.

December 2015

CRADA: Develop, Integrate and Demonstrate Heavy-Duty Natural Gas Engines and Vehicles

Contractor

National Renewable Energy Laboratory

Cosponsors

SCAQMD CEC U.S. DOE SoCalGas

Project Officer

Adewale Oshinuga

Background

On-road natural gas engines are now being used on a limited basis as an alternative to diesel engines in transit, refuse, and goods movement applications. While the number of these engines has grown, there is still a need to develop natural gas engines in the 11- to 14-liter range to fill the wide array of fleet applications currently served by diesel engines. As such, on March 4, 2011, the Board awarded a contract to the DOE's National Renewable Energy Laboratory to administer the development, integration, and demonstration of heavy-duty natural gas engines and vehicles.

Project Objective

The primary objectives of this project included the following:

- Develop a new, high-efficiency, highperformance, high-versatility, low-emissions, heavy-duty 11.9 liter natural gas engine and three-way catalyst after-treatment;
- Certify the new engine at or below EPA / CARB 2010 on-highway emission standards;
- Achieve fuel efficiency within 5-15% of comparable EPA/CARB 2010 on-highway certified diesel engines; and
- Achieve OEM availability in a range of vehicles commonly used by fleet operators in the North American regional haul and vocational Class 8 truck and tractor market.

Technology Description

The engine technology is a spark-ignited stoichiometric natural gas engines with cooled exhaust gas circulation (EGR) and a three-way catalyst (TWC) after-treatment system. The cooled EGR systems reduce engine NOx emissions by mixing incoming fresh air with a measured quantity of cooled exhaust gas to lower peak combustion temperature. The TWC converts NOx, CO, and HC to nitrogen, carbon dioxide, and water in the presence of a catalyst.

Status

Cummins Westport, Inc., (CWI), working as a subcontractor to NREL, successfully completed the project and developed a 11.9-liter ISX12 G engine as a spark-ignited, stoichiometric, cooled exhaust gas recirculation (SI-EGR), natural gas engine certified to the EPA/CARB heavy-duty on-highway 2013 emission standards. CWI commercially launched the ISX12 G engine with ratings up to 350 HP and 1450 lb-ft beginning in mid-April 2013, and with ratings up to 400 HP and 1450 lb-ft in August 2013. This engines will be used in refuse, transit and Class 8 heavy-duty truck applications.



Results

The ISX12 G engine meets EPA greenhouse gas legislated requirements and Engine Manufacturer's Diagnostics (EMD+) certification. The ISX12 G engine met final certification (including Deterioration Factor) at:

- 0.15 g/bhp-hr NOx for both EPA and CARB
- 0.03 g/bhp-hr NMHC for both EPA and CARB
- 8.4 g/bhp-hr (EPA) and 8.7g/bhp-hr (CARB) CO
- Less than 0.003 g/bhp-hr PM

Benefits

The ISX12 G engine is certified to the EPA/CARB heavy-duty on-highway 2013 emission standards and also meets EPA greenhouse gas legislated requirements and Engine Manufacturer's Diagnostics (EMD+) certification. It is now being used as alternative to diesel engines in various applications which require high-horsepower engines.

Project Costs

This project was originally part of a natural gas engine development and demonstration program for three projects. The program cost was estimated to be \$15,245,000, of which SCAQMD provided \$2,555,000 in addition to \$500,000 in cofunding from SoCalGas. The U.S. DOE, CEC, and private partners provided the remaining \$12,190,000 in direct funding and in-kind contributions. The other two projects were discontinued because one subcontractor went out of business, and the other lacked financial support. Since the program was not completed, the cost of this project was \$3,607,651, of which SCAQMD provided \$797,629.

Commercialization and Applications

The ISX12 G engine is now available as a factoryinstalled option in a number of Class 8 truck and tractor models from different OEMs including Autocar, Freightliner, Kenworth, Mack, Peterbilt, and Volvo. This engine will be used in refuse, transit and Class 8 heavy-duty truck applications.

December 2015

Purchase and Install New Public Access L/CNG Fueling Station

Contractor

City of Commerce

Cosponsors

Federal Transit Administration MSRC/AB 2766 Discretionary Program Caltrans SCAQMD City of Commerce

Project Officer

Larry Watkins/Phil Barroca

Background

To comply with SCAOMD's fleet rules, the City of Commerce began to transition its transit fleet to CNG. In 2003, the City of Commerce began planning for the installation of a new L/CNG facility. The new station would provide convenient, local refueling for the City's 11 CNG transit buses, which since 2009 had been fueling at a CNG station in Bellflower, as well as accommodate City plans to expand its natural gas fleet. It would also allow for refueling by other local alternative fuel fleets including private waste sanitation companies, taxicabs and limos and could be a convenient refueling location for Port drayage trucks. The site chosen was the Los Angeles County Sanitation District's Waste-to-Energy facility located at 5940 Shelia Street in the City of Commerce. The site is near the intersection of Washington Boulevard and Interstate 5.

Project Objective

The objective of this project was to design, construct and commission a new publicly accessible L/CNG refueling station that would serve the needs of the City of Commerce and other private and municipal fleet users. The station would also help achieve the goal of reducing air pollution in and around the Commerce community as well as continue development of the Interstate Clean Transportation Corridor (ICTC), which fosters alternative fuel vehicle infrastructure development for heavy-duty vehicles throughout California and into Nevada, Utah and Arizona.

Technology Description

The L/CNG fueling station consists of a 15,000 LNG storage vessel mounted on a containment area designed to accommodate a second vessel in the future. Fuel is produced in Boron, CA, with LNG trailers filling the storage vessel by means of a dedicated LNG transfer pump. The LNG tank feeds LNG to a single submerged-type multi-purpose LNG pump that delivers LNG to both an LNG dispenser and to a high pressure reciprocating L/CNG pump. The LNG system includes an LNG conditioner (saturation coil) designed to maintain the saturation pressure between 65 and 125 psig within the storage vessel. The station includes one LNG dispenser located adjacent to the containment area. CNG is produced by pumping the LNG through a high-pressure vaporizer to produce CNG, which is odorized and stored in a bank of highpressure storage containers (high, mid and low). The CNG storage supplies CNG through a CNG priority panel to two dual-hose CNG dispensersone transit type and one regular type-located on a new CNG dispenser island. A Programmable Logic Control system is integrated to control all LNG/LCNG functions. The station also includes a card reader for credit card purchases.

Status

After a three-year process, the station was commissioned in August 2010.



Figure 1: New L/CNG Fueling Station

In November 2007 the City of Commerce was granted a Categorical Exclusion by FTA to construct its station and an RFP to solicit designbuild proposals was released on September 2, 2008. The City Council awarded the contract to General Physics and a ground-breaking ceremony was held on April 29, 2010. Construction included site preparation, civil work, demolition and/or relocation of existing facility equipment, and the new station included all equipment, controls, containment areas, piping, electrical connections, paving, fencing, lighting, signage, and landscaping. The start of construction was delayed because the soil at the existing site was not dense enough to support the weight of the L/CNG station so the contractor had to re-compact the soil at the site before construction began. Further delays were caused by a lengthy permit review process and inclement weather. The station opened 24/7 to the general public in September 2010, with a formal ribbon-cutting ceremony conducted on August 5, 2010. The SCAQMD contract ended December 31, 2015, after five years of reporting.

Results

When the City introduced its new CNG transit fleet in early 2009, it resulted in a 90 percent reduction in emissions over the old diesel buses. The new L/CNG station has now allowed the City to fuel transit buses within one mile of its Transportation Department facility, realizing a reduction of 90 cents per gallon in costs or an estimated annual savings in fuel costs of \$80,000.



Figure 2: City of Commerce transit bus fueling at the new L/CNG station

Annual throughput was estimated at 347,000 gallons of LNG by the end of the third full year of operation. This table reflects actual throughput during the five years of reporting required by the SCAQMD.

Year	City	Third Party	Total LNG Sales in GGE
2011	92,627	115,915	208,542
2012	98,707	395,539	494,246
2013	115,420	804,707	920,127
2014	125,064	999,830	1,124,894
2015	131,056	846,952	978,008

Benefits

In addition to enhancing the regions clean fuel infrastructure, the new L/CNG station is one more step towards reducing dependence on imported oil, with 98 percent of the LNG fuel used at the station coming from domestic fuel sources.

Project Costs

SCAQMD's cost-share was eight percent of the total.

FUNDING SOURCE	AMOUNT
Federal Transit Administration	\$2,198,997
Caltrans	\$273,577
MSRC/AB 2766 Discretionary Fund	\$350,000
SCAQMD-Clean Fuels	\$250,000
City of Commerce, Transportation Development Act, Article 4	\$110,674
City of Commerce, Measure R Clean Fuels & Miscellaneous	\$38,739
City of Commerce, Capital Improvement Program	\$68,602
TOTAL	\$3,290,589

Commercialization and Applications

The new L/CNG fueling station is similar to other stations in Southern California; however, its location specifically helps foster growth in the regional heavy-duty natural gas vehicle fleet. In fact, the 1,000 new LNG trucks deployed in 2011 nearby the Ports of Los Angeles and Long Beach will now have a convenient fueling location near the BNSF and Union Pacific railyards in Commerce.

June 2015

Repower One Off-Road Construction Vehicle

Contractor

Post Company Grading

Cosponsor

SCAQMD Post Company Grading

Project Officer

Vasken Yardemian

Background

Based on the California Air Resources Board (CARB) OFFROAD 2006 emission model, there were approximately 68,600 diesel-powered offroad construction vehicles in the South Coast Air Basin in 2006, which together produced approximately 120 tons of NOx and 7.5 tons of PM emissions per day. In order to reduce diesel emissions of NOx and PM, the SCAQMD has provided incentive funding to operators of diesel-powered off-road construction vehicles to go beyond regulatory requirements to repower, or replace their engines with newer and cleaner ones.

On April 6, 2007, the SCAQMD Board awarded a contract to Post Company Grading to repower one Tier 0 diesel-powered dozer (off-road construction vehicle) with a new Tier 3 diesel engine in an amount not to exceed \$92,244 from the Clean Fuels Fund. This project was one of several funded projects as part of a required match for the Carl Moyer Air Quality Standards Attainment Program (Carl Moyer Program) and was administered according to the 2005 Carl Moyer Program Guidelines.

Project Objective

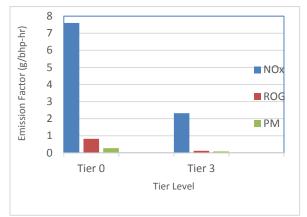
The purpose of this project is to reduce emissions from construction equipment through the repower of one diesel engine dozer to meet the CARB Tier 3 emission standards of 2.32 g/bhphr of NOx, 0.12 g/bhp-hr of ROG and 0.088 g/bhp-hr of PM10.

Technology Description

A repower is the replacement of the existing engine with a new lower-emission CARBcertified engine. The repower consisted of removing the existing engine and accessory components and installing a new engine and associated accessory components. The repower was performed by Quinn CAT, an independent Caterpillar dealership using Caterpillar factory engine and accessories along with specially fabricated components (brackets, wire harnesses, hoses, etc.) needed to fit the new engine into the existing vehicle.

Repower is typically more cost effective in reducing emissions than replacing a vehicle, due to the higher cost of a new vehicle compared to just a new engine. The emission reduction from Tier 0 to Tier 3 is 70% for NOx, 85% for ROG (reactive organic gases) and 68% for PM. The following chart illustrates the difference in emissions between Tier 0 and Tier 3 engine emission factors.

Figure 1: Carl Moyer Program Emission Factors



Status

The project was scheduled to be completed by June 2008. However due to the economic downturn of the construction industry and the

non-availability of Tier 3 engines, SCAQMD agreed on an extension of the contract till November 2008. The dozer was placed in service thereafter. The Contractor made all the operational information for the vehicle available to SCAQMD including the annual hours of operation. According to the Contractor, the vehicle performed well; however, it ran hot from time to time. No major problems to report. The project life was seven years.



Figure 2: Caterpillar D9N Dozer Repowered to Tier 3

Results

The repowered vehicle was inspected by SCAQMD to confirm that the repower was completed properly, the old engine was permanently destroyed and the repowered vehicle was fully operational.

Benefits

The emissions benefit of the repower was calculated according to the Carl Moyer Program Guidelines. The Tier 3 engine in the repowered dozer was estimated to reduce emissions by 2.24 tons per year of NOX+ROG and 0.07 tons per year of PM10 compared to the original Tier 0 engine.

Project Costs

The total actual cost of the project was \$121,942. The cost of the new Tier 3 engine and parts was \$95,900 and the labor cost was \$26,041. SCAQMD's funding contribution was \$92,244, paid to the contractor from the Clean Fuels Fund. Originally the project cost was estimated at \$140,344. However, Quinn CAT, the repowering company, issued a \$15,000 discount on the labor.

Commercialization and Applications

Repower technologies using Tier 3 diesel engines for off-road construction vehicles are commercially available for a variety of off-road equipment. The current emission standard is Tier 4 and repowers using Tier 4 engines are generally not technically feasible in older offroad vehicles. Preference is now being given to replacement projects using new equipment meeting Tier 4 standards.

June 2015

Repower of 11 Off-Road Construction Vehicles

Contractor

Mesa Contracting Corporation

Cosponsor

SCAQMD Mesa Contracting Corporation

Project Officer

Mark Coleman

Background

Based on the California Air Resources Board (CARB) OFFROAD 2006 emission model, there were approximately 68,600 diesel-powered offroad construction vehicles in the Basin in 2006, which together produced approximately 120 tons per day of NO_x and 7.5 tons per day of PM emissions. In order to reduce diesel emissions the SCAQMD has provided incentive funding to operators of diesel powered off-road construction vehicles to upgrade to cleaner technology.

On April 6, 2007, the SCAQMD Board awarded a contract to Mesa Contracting Corporation to repower thirteen Tier 0 diesel-powered off-road construction vehicles with new Tier 3 diesel engines in an amount not to exceed \$1,062,007 from the Clean Fuels Fund. This project was one of several funded as part of a required match for Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) projects and was administered according to the 2005 Carl Moyer Program Guidelines.

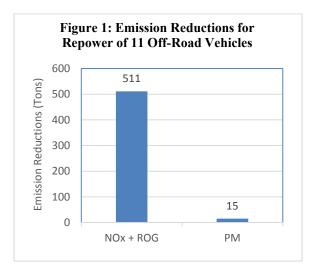
Project Objective

The purpose of this contract was to reduce emissions from diesel powered off-road construction vehicles by repowering them to meet CARB Tier 3 emission standards, the most stringent at that time.

Technology Description

Repower is the replacement of the existing engine with a new lower-emission CARB-certified engine. The repower consisted of removing the existing engines and accessory components and installing new engines and accessory components. The repower was performed by an independent Caterpillar mechanic using Caterpillar factory engines and accessories, and using specially fabricated components (brackets, wire harnesses, hoses, etc.) needed to fit the new engine into the existing vehicle.

Repower is more cost effective in reducing emissions than replacing the vehicle due to the much higher cost of a new vehicle compared to the cost of a new engine. The following chart illustrates the repowered construction equipment emission reductions for the seven-year project life.



Status

Eleven scrapers of the type shown below were repowered in 2008. Beginning in 2008, construction activity was substantially reduced due to the severe economic recession. As a result, the contractor did not repower the remaining off-road construction vehicles. Unspent contract funds were returned to the Clean Fuels Program Fund for use on other projects.



Figure 2: Caterpillar 651B Scraper Repowered to Tier 3

Results

The repowered vehicles were inspected by SCAQMD to verify that the repower was completed properly, the old engines were destroyed, and the repowered equipment was fully operational.

Benefits

The emission benefits of the repowers were calculated according to the Carl Moyer Program Guidelines. The Tier 3 engines were estimated to reduce emissions by 73 tons/year NOx+ROG and 2.2 tons/year PM compared to the original Tier 0 engines.

Project Costs

A total of \$898,622 from the Clean Fuels Program Fund was paid to the contractor. In addition, the contractor paid another \$320,654 for a total project cost of \$1,219,276. A total of \$163,385 was returned to the Clean Fuels Program Fund.

Commercialization and Applications

Repower technologies using Tier 3 diesel engines for off-road construction vehicles are commercially available for a variety of off-road equipment. The current emission standard is Tier 4 and repowers using Tier 4 engines are generally not technically feasible in older off-road vehicles. Preference is now being given to replacement projects using new equipment meeting Tier 4 standards.

December 2015

Collaborative Lubricating Oil Study on Emissions (CLOSE)

Contractor

National Renewable Energy Laboratory (NREL)

Cosponsors

Southwest Research Institute (SWRI) Desert Research Institute (DRI)

Project Officer

Joseph Impullitti

Background

According to official government inventories, mobile sources currently account for a third of the directly emitted PM2.5 emissions in California's South Coast Air Basin (SoCAB), with gasolinepowered vehicles accounting for less than 10% (CARB, 2008). However, model predictions have shown that gasoline-powered vehicles may account for 60% of the total predicted secondary organic aerosols (SOA) in the SoCAB during summer (Kleeman et al., 2007).

Project Objective

The objective of this project was to conduct chemical and physical characterizations of particulate matter (PM) emissions from a limited number of vehicles fueled respectively with gasoline, E10, diesel, biodiesel, and natural gas while operating on fresh and used crankcase lubricants in an effort to investigate methodologies to indicate how fuels and crankcase lubricants contribute to the formation of PM and semi-volatile organic compound (SVOC) emissions in vehicle exhaust.

Technology Description

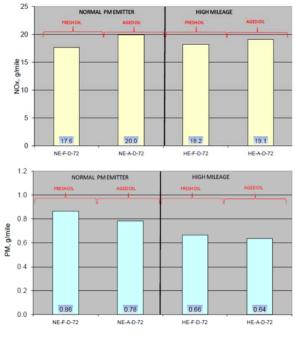
This project was initiated to characterize particulate matter (PM) emissions from four vehicle types operating on multiple fuels and lubricants at two test temperatures. The four vehicle types studied were: light-duty gasoline passenger cars, medium-duty diesel trucks, heavy-duty natural gas fueled transit buses, and heavy-duty diesel transit buses. Two vehicles of each vehicle type were selected and studied: one normal PM emitting vehicle and one high PM emitting (or high mileage) vehicle. PM characterizations were carried out to investigate whether the relative contribution of lubricant to particulate could be estimated, and whether the lubricant contribution to PM changed with different fuels and lubricant compositions.

Status

The CLOSE project was a pilot program to investigate methodologies to indicate how fuels and crankcase lubricants contribute to the formation of particulate matter (PM) and semi-volatile organic compounds (SVOC) in vehicle exhaust. It was conducted with a very limited number of vehicles, some of which did not have the latest engine and emission system technology, and no vehicles in this study were equipped with particle traps. The results of this study are not representative of the whole fleet of on-road vehicles. Long term lubricant effects on engine and after-treatment were not investigated in this study.

Results

Average regulated gaseous emissions, PM emissions, and fuel consumption rates while operating the vehicles with fresh and aged oil are included. Standard deviations and co-variances of the replicate tests are also provided (each replicate being comprised of one cold start and one hot start heavy-duty driving cycle [HDDC] test). All heavyduty emission tests were conducted at a nominal 72°F ambient temperature. Repeatability of the emissions from the replicate tests was good. As shown in Fig. 1. hydrocarbon rates measured from the normal emitter (NE) bus on aged oil showed the greatest variability between the two replicate tests with a covariance of 15 percent. NOx emissions from the NE also exhibited higher variability with a covariance of 11 percent on fresh oil. In addition, hydrocarbon emissions from the high mileage (HM) bus with high blow-by on aged oil showed a covariance of 11 percent, but all other emission rates exhibited lower variability with co-variances below 10 percent.



NOx and PM Comparative of Fresh and Aged Oil

For the normally-operating light-duty gasoline and medium-duty diesel vehicles and for both heavyduty natural gas vehicles, fresh oil produced more particles than aged oil. The opposite trend occurred with the light- and medium-duty high PM emitters. This effect was not readily apparent with the heavyduty diesel vehicles. One explanation could be that, since the lubricant represented a much smaller fraction of the total PM (around 20 percent) in the HD diesel vehicles, the effect was lost in the precision of the testing methodology.

In many cases, emitted PM was incompletely accounted for with chemical analyses. It is possible that some fraction of unburned and/or partially combusted fuel and oil, or some polar fraction of PM, was not measured with the analytical techniques used in this program.

Follow-up studies should assess the methods of PM allocations used in this study on vehicles representing the diverse spectrum between normal emitters and high emitters, and should estimate the precision of the allocations obtained by running multiple analyses. Vehicles should be tested with fuels without hopanes and steranes in order to help clarify the potential confounding (or lack thereof) when markers are parented by both fuel and lubricant. Studies should be conducted to understand the relative frequency of various types and intensities of 'high emitters' to facilitate modeling of the on-road vehicle fleet.

Future Work

Future work could consider testing emissions from diesel vehicles equipped with normally-functioning particle filters to determine if this type of aftertreatment system produces similar results. Also, it would be informative to utilize the latest engine and emissions system hardware for all the vehicles to determine if the considerable efforts by regulators and OEMs have impacted PM levels. Noting that aged lubricants sometimes produce less PM than fresh oil, it would be interesting to investigate the effects of base oil volatility and type (i.e., mineralbased versus synthetic) on PM and SVOC formation.

Project Costs

The total cost of the project was \$446,887. The table below shows the breakdown of the funding for the project:

Funding Source	Amount
SCAQMD	\$100,000
CARB	\$100,000
NREL	\$246,887
Total:	\$446,887

Commercialization and Applications

The U.S. Environmental Protection Agency (EPA) revised the National Ambient Air Quality Standards (NAAQS) for PM10 and PM2.5 in October 2006, revoking the annual PM10 standard and lowering the 24-hour PM2.5 standard to 35 μ g/m3. The existing annual 24-hour standards for PM10 and PM2.5 (150 μ g/m3 and 15 μ g/m3, respectively) were retained. Control plans for the 2006 standards are to be submitted to EPA in the 2012-13 timeframe for areas that are in nonattainment. In preparing these plans, State and local agencies are using emissions models and chemical transport models to identify and evaluate potential emission reduction measures.

To supplement current knowledge of particulate emissions from mobile sources, and to investigate methods to identify the sources of compounds which make up particulate, the CLOSE project was undertaken with support from Federal, State, and local government agencies and industry.

January 2015

Install an Approximate 40kW (AAC) Crystalline Silicon System at SCAQMD Headquarters

Contractor

PermaCity Solar

Cosponsor SCAQMD

Project Officer

Patricia Kwon



Background

On October 3, 2008, the Board approved the execution of contracts to install two new photovoltaic (PV) systems at the SCAQMD facility in Diamond Bar, CA. The SCAQMD currently owns and operates two solar PV installations, an 80 kW (AC) system on the main building and a 20 kW solar carport.

Project Objectives

The objective of this project was to compare the performance of thin film and crystalline silicon PV modules, as well as add solar capacity for the facility. The project demonstrated two different PV technologies on the roof above the conference center. SCAQMD tested the performance and reliability of the two systems under similar light conditions. This contract report is for the PermaCity contract effort.

Technology Description

For the PermaCity crystalline silicon system, 144 Schott ASE-300DGF/50-310 (310 watt) modules and an SMA America ST 42 (277 volt) inverter (96% efficiency) were installed for an overall system output of 44.64 kW DC. This system utilized multi-crystalline photovoltaic modules, as compared to Solar Integrated Technologies' (SIT's) amorphous thin film modules, tilted at a 15 degree angle.

Status

This project was completed on June 17, 2009. During the project, there were some delays in the delivery of equipment. This issue was solved by working as efficiently as possible to keep the crew on schedule despite the delayed delivery. Since there were two separate systems and one rebate, a combined single line diagram was submitted to the City of Diamond Bar for permitting. The existing SCAQMD single line diagram was several years old and did not include four turbine engines so the single line diagram was updated. SIT was contracted to reroof underneath the modules, delaying the project by two days. Southern California Edison mandated an unanticipated \$1,041 new meter charge that was split between PermaCity and SIT.

One of the inverters utilized in PermaCity's Sunny Tower inverter malfunctioned and had to be repaired and later replaced in January 2010, as well as a broken Schott module replaced under warranty in February 2010. Data for this inverter had not been reporting since September 2009, and began reporting again in February 2010.

SCAOMD, Fat Spaniel Technologies, and PermaCity collaborated on the monitoring system and solar kiosk. In July 2010, the kiosk was upgraded to Solar Plant Vision from Fat Spaniel to separately monitor the performance of the two new solar installations as well as the first 80 kW solar installation. The kiosk experienced intermittent problems since its installation in August 2009 due to the kiosk being overloaded from too much data. Later the kiosk was replaced and upgraded by Solar City to run on a new Windows software platform and replace the 100 kW SatCon inverter gateway providing performance monitoring of the 80 kW system. Three solar PV systems totaling 160 kW were installed on the rooftop of SCAQMD's Diamond Bar headquarters building in May 2006

(80 kW), July 2009 (40 kW) and December 2009 (40 kW). The performance and production statistics of the three systems were monitored and displayed on an interactive touch-screen kiosk in the main lobby ground-level entrance.

Results

Over its lifetime, the PermaCity crystalline silicon solar installation will produce 2,764,320 kilowatt hours of electricity, preventing release of 3,427,764 pounds of C02 to be released into the air, 1,106 tons of coal to be burned and will save the equivalent of 442 acres of forest. Production data for both system is shown in Figure 1.

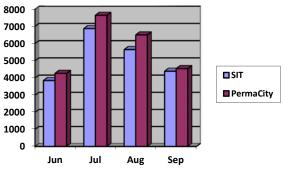


Figure 1: Solar Production

Benefits

Estimated CO2 reductions for both solar PV installations are approximately 78 tons/year using the California GREET model. The solar installation will, over the course of its lifetime, prevent release of 3,427,764 pounds of CO2 to be released into the air, 1,106 tons of coal to be burned and will save the equivalent of 442 acres of forest. These numbers were reached by utilizing the GREET model, an emissions reduction calculator provided by the EPA¹.

The environmental cost of production for these modules is offset after between 1.5 - 3 years of energy production². Since crystalline modules, unlike most thin film modules, do not utilize toxic cadmium in their production, there is no environmental concern regarding contamination.

Project Cost

The costs of this installation was on budget. As this was a project for SCAQMD, the entire cost of the system which totaled \$387,162 was paid by SCAQMD. The entire Performance Based Incentive from Southern California Edison was received over a five-year period ending in 2015.

Commercialization and Applications

Both crystalline and thin film solar modules are already commercial products. They have both demonstrated their efficacy and applications in the renewable energy generation field. The increased demand for renewable energy has led to mass production of solar modules making them an affordable, widely available commercial product. However based on the performance of both technologies at the SCAQMD headquarters facility, it appears that multi-crystalline silicon modules performed better overall than thin film silicon modules.

¹ <u>http://www.epa.gov/RDEE/energy-resources/calculator.html</u>

² Alsema, E.A.; Wild - Scholten, M.J. de; Fthenakis, V.M. <u>Environmental impacts of PV electricity generation - a critical comparison of energy supply options</u> ECN, September 2006; 7p. Presented at the 21st European Photovoltaic Solar Energy Conference and Exhibition, Dresden, Germany, 4-8 September 2006.

April 2015

Demonstrate a 300kW Molten Fuel Cell with an Exhaust-Fired Absorption Chiller

Contractor

University of California, Irvine

Cosponsors

California Energy Commission FuelCell Energy Southern California Gas Company UC Irvine Medical Center SCAQMD

Project Officer

Joseph Impullitti

Background

In California, a substantial potential exists to capture generator waste heat with an absorption chiller and provide air conditioning to meet a wide spectrum of applications that have significant cooling demands throughout the year. Such combined cooling, heat and power (CCHP) systems offer benefits of increased energy efficiency and reduced emissions of both criteria pollutants and greenhouse gases (GHGs). Needed is an ultra-clean, integrated generator/absorption chiller product to enable the California market.

Project Objective

The objectives of the project were to (1) design, deploy, commission, and operate a megawatt class high temperature fuel cell/absorption chiller (HTFC/AC) system, (2) characterize the criteria and pollutant emission reductions, (3) develop complementary HTFC/AC performance and economic models, (4) deploy a wide array of monitoring sensors to capture performance and inform the system models, (5) evaluate the performance and market value of the product in California, and (6) advance market engagement.

Technology Description

High-temperature fuel cells (HTFCs) have an unusually high electrical efficiency and high-quality exhaust heat temperature, and emit virtually zero criteria pollutants. The high quality heat can be recovered through absorption chilling (AC) for air conditioning and thereby (1) displace electricity required today for electric chillers, (2) substantially reduce the emission of criteria pollutants and GHGs, and (3) increase the reliability and reduce operating costs for the customer.

The strategy integrated a FuelCell Energy 1.4MW high temperature molten carbonate fuel cell with a BROAD 200 ton absorption chiller. A critical care facility, the UC Irvine Medical Center (UCIMC), was selected for the installation. For market engagement, a dedicated conference room was equipped to present the system design and operating principles, as well as the current and historic performance to developers and energy managers.

Status

The system and economic models were completed and utilized to design the HTFC/AC system. For the purposes of scaling, a 300kW/40Ton system was considered as well as the 1.4MW/200Ton system actually deployed. A Power Purchase Agreement was successfully negotiated between FuelCell Energy and UCIMC, and funds from the California



Figure 1: Fuel Cell



Figure 2: Absorption Chiller

Public Utilities Commission Self-Generation Incentive Program (SGIP) were successfully reserved. The system was installed under the leadership of the Otto H. Rosentreter Company, and the system is on track for commissioning in December 2015 upon completion of the interconnection agreement with Southern California Edison.

While a number of unscheduled hurdles delayed the original schedule of deployment, two were especially challenging. The first was the suspension of the SGIP that began in December 2010 and lasted more than a year before the revised SGIP process was fully implemented. The second was the interconnection agreement that was initially scheduled to be completed within months but extended to one year.

Results

The performance and economics models were applied to calculate the following projected emissions and costs associated with HTFC/AC installations.

Air Pollutant	CO ₂	NO _x	SO _x
Emission Level (lb/MWh)	854	0.0087	0.00009

If the electricity and chilling generated to serve all of the commercial building loads in the Southern California Edison (SCE) service territory were generated by HTFC/AC technology, CO2 emissions would decrease by 3,272 million metric tons per year, NOx emissions would decrease by 5,470 metric tons, and SOx emissions would decrease by 171 metric tons.

Cost	FCE 1.4 MW DFC1500
Installation Cost (\$/kW)	3300
Fixed Operation and Maintenance Cost (\$/kW-yr)	200
Levelized Cost of Electricity (LCOE) (\$/MWh)	101

The levelized cost of electricity (LCOE) goes down as the capacity factor of the installation goes up. The more the system operates, the greater the output of useful products and the lower the LCOE. The LCOE is minimized when the HTFC operates around-theclock as a base load generator and the chiller maximizes the use of the high-quality heat. A sensitivity test, conducted to evaluate the impact of future HTFC/AC system scenarios, revealed that the fuel cell efficiency and natural gas price had the biggest effect on LCOE, with lower natural gas price and higher fuel cell efficiency resulting in a lower LCOE.

Due to the delay in installation and commissioning, no data on the unit operation are currently available. Data will be gathered from the installation at the UCIMC to both document performance and evaluate the model predictions. This activity is scheduled to commence in December, 2015.

Benefits

HTFC/AC technology has the combined benefits of (1) reducing the emissions of GHGs and criteria pollutant emissions associated with electricity generation, distribution and use, (2) enhancing the economy through technology advancement, employment, and education, (3) reducing the cost-of-electricity, and (4) increasing the reliability and power quality of electricity.

Project Costs

The total project cost was \$35.1M. The project was funded by the California Energy Commission, Southern California Gas Company, the SGIP, the UCIMC, FuelCell Energy, and the SCAQMD. The contribution from the SCAQMD was \$257,500.

Commercialization and Applications

An objective of the project is to enable the HTFC/AC market, a technology particularly wellsuited to California. To accomplish this, a practical installation of HTFC/AC technology was completed at a highly visible location, a metering network was integrated into the design to monitor the performance of the system and components of the system, and a conference room was established to showcase the technology to the market. Market penetration is expected to lead to capital and O&M cost reductions, and facilitate corresponding GHG and criteria pollutant emissions reductions.

The knowledge and experience derived from this project has the potential to benefit the public by furthering the understanding of HTFC/AC technology. The fuel cell and absorption chiller is readily available through FuelCell Energy and BROAD U.S.A. Incorporated, respectively. This technology can be implemented at any location which has access to natural gas or biogas.

November 2015

Develop Retrofit Technology for Natural Gas Engines and In-Use Emissions Testing of On-Road Heavy-Duty Trucks

Contractor

West Virginia University

Cosponsors SCAQMD CARB

Project Officer

Adewale Oshinuga

Background

The SCAQMD funded a research program at West Virginia University (WVU) to develop a retrofit technology for stoichiometric natural gas engines capable of simultaneous reduction of NOx and ammonia emissions. In addition, the study jointly funded a program with CARB to evaluate heavyduty diesel vehicle emissions during real-world operating conditions using a transportable CVS measurement system.

Project Objective

The study was divided into two phases, a) Phase I: evaluate real-world emissions from seven heavyduty diesel vehicles fueled by diesel and natural gas using a transportable emissions measurement system (TEMS) and a suite of portable emissions measurement systems (PEMS), b) Phase II: research multiple pathways of a passive SCR system for abatement of ammonia and NOx emissions from three-way catalyst (TWC) equipped on-road natural gas engines.

Technology Description

Phase I: Seven vehicles were tested primarily in Southern California on desert routes, freeway operation, and port drayage operation simulated at the Ports of L.A., urban delivery routes in Irvine and in Central Valley over the Interstate 99 corridor. Vehicles were tested using the TEMS, which houses a full-scale dilution tunnel with laboratory-grade emissions analyzers. In addition, the study used three different PEMS instruments, namely, Horiba OBS 2200, SEMTEC DS and the AVL MOVES system. A high-speed FTIR was used for measuring real-time greenhouse gas and ammonia emissions from the vehicles. The test routes represented realworld driving conditions in Southern California. The study included a MY 2008 diesel truck to establish baseline emissions for a non-SCR equipped vehicle.

Phase II: WVU tested three SCR formulations provided by Corning and AP Exhaust. The formulation varied in cell density and catalyst loading. The hypothesis of Phase II was to employ SCR catalyst as a passive ammonia storage system that can use the NOx slip from TWC as a source to regenerate the stored ammonia while further reducing NOx. An aging catalyst will have lower selectivity to NOx reduction and as a result have increased NOx emissions. Therefore, a passive SCR system with TWC as the onboard ammonia storage can effectively lower the NOx profile of CNG through its useful life.

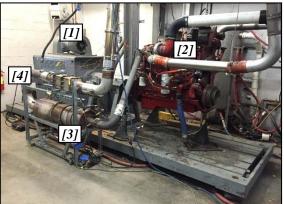


Figure 1: WVU Engine Testing Laboratory; [1] AC 300HP high speed dynamometer, [2] Cummins ISLG320, [3] Three-way Catalyst (TWC), [4] Passive selective catalyst reduction (SCR) for NH3 and NOx reduction

The project was successfully completed and the final report is being prepared. Extensive data from real-world testing of heavy-duty vehicles were collected from Phase I and a retrofit ammonia and NOx abatement technology was developed as part of Phase II.

Results

Phase I: The results show that the highway operation resulted in the lowest emissions from all vehicles. Vehicle 7 (DPF-SCR equipped) showed the lowest emissions on highway operating conditions. The near-dock operation characterized by extended idle and creep mode operation resulted in the highest NOx emissions from the diesel vehicles. The average NOx emissions of diesel vehicles using DPF and SCR were 96% lower than a MY 2008 diesel vehicle over the regional cycle. The natural gas truck emissions were 50% lower than DPF-SCR equipped diesel over the regional cycle. The natural gas vehicle (vehicle 3) showed 88% lower NOx emissions during near-dock port operation compared to the average of all DPF-SCR equipped diesel vehicles.

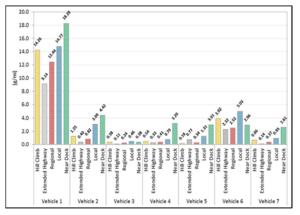


Figure 2: shows the distance-specific NOx emissions from the test vehicles over the road measured using the TEMS

Phase II: SCR 2 formulation showed the highest NOx conversion efficiency of 56.9% and the lowest NH3 reduction of 63.6%, while the SCR 3 formulation resulted in the highest NH3 reduction of 82.5%, with slight reduction in NOx conversion to 53.9% compared to SCR 2 formulation. As a further extension to this Phase, WVU is working with engine controls to change the air-fuel ratio (AFR) of the stoichiometric engine between rich mode (NH3 production mode) and lean mode (NH3 regeneration mode). It is believed that this approach could result in an engine calibration that could run on a leaner air fuel ratio for enhanced fuel economy. This could potentially increase the operating range of a stoichiometric natural gas engine.

In development of the passive SCR strategy it was found that the current pathway would vastly benefit from OEM input with engine calibrations tuned to regenerate and absorb ammonia emissions from TWC. Continuing work is done by WVU, beyond the scope of project.

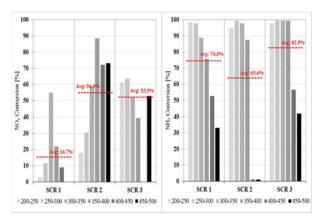


Figure 3: NOx and NH3 reduction efficiency results for varying temperature bins of three different tested zeolite SCR catalysts over an FTP cycle; [SCR 1] Iron (Fe) based low cell density zeolite catalyst, [SCR 2] Iron (Fe) based high cell density zeolite catalyst

Benefits

Phase I results show the advantages of CNG vehicles in urban goods movement applications with their low NOx characteristics. Phase II results show that a passive SCR strategy is a viable pathway to reduce simultaneously both ammonia and NOx slip from stoichiometric NG vehicles.

Project Costs

The total project cost was \$490,000, with cofunding as follows: WVU, \$50,000; CARB, \$100,000; and SCAQMD, \$390,000. The project was completed within the allocated budget.

Commercialization and Applications

The approach of frequently changing AFR to optimize ammonia and NOx reduction will also result in leaner operation of NG vehicles leading to a lower NG fuel consumption. However, implementation and commercialization of this strategy requires significant involvement by the OEM to provide calibration control of the engine. WVU proposes to approach Cummins Westport with the proposed strategy in order to evaluate its efficacy on a production engine.

January 2015

Operate Truck Outreach Centers -Trucking Information Points (TIPs)

Contractor

Gladstein, Neandross & Associates LLC (GNA) Advanced Transportation Technology & Energy Network of the California Community Colleges (ATTE)

Cosponsors

SCAQMD U.S. DOE

Project Officer

Lori Berard

Background

The Trucking Information Points (TIPs) program is designed to reach heavy-duty truck owneroperators in the South Coast Air Basin. This demographic group was specifically targeted because they typically lack the time and resources to keep up to date on changing and developing regulations and policies that are germane to their information livelihood. Outreach includes regulations, funding opportunities, and resources learn about advanced transportation to technologies and training opportunities. To reach this group of truck owners and operators, an extensive website was created (www.tipsfortrucks.com) that links into information kiosks located at two customer service centers with support from a toll-free hotline for inquiries. The service centers are strategically located at the Port of Long Beach Terminal Access Center (TAC) and another at a truck maintenance and service center, J&R Fleet Services in Bloomington, CA, within the Inland Empire. The TIPs service centers are freestanding, computerized information kiosks equipped with connection to the tipsfortrucks.com website, touch screen browsing, and printing capabilities.

Project Objective

GNA's objective was to create bi-lingual, easy to understand terminology relating to specific regulations, funding opportunities, and advanced transportation technologies, and to place this information on the web and in easily accessible places for the target audience of small-fleet or single-truck owner-operators engaged in goods movement within the South Coast Air Basin.

The purpose of this project is to help the clientele to be better equipped to assess their regulatory status and to understand the technology and equipment solutions that they may need. Ultimately, the TIPs program will enable truck owner-operators to maintain their course of business while helping California to reach its emission reduction goals.



TIPs kiosk at J&R Fleet Servicesin Bloomington, CA

Technology Description

This project involves the design and content of an information web site (www.tipsfortrucks.com) and two stand-alone kiosks with the following components:

- Touch-screen display monitor
- Wi-Fi and hard-wire internet connection
- Internal black and white printer with paper spool

- Targeted signage displaying website prominently
- Website featuring regulatory language from the California Air Resources Board and the SCAQMD, funding opportunity descriptions for California opportunities, and advanced transportation technologies and training resources.

Status and Results

GNA has installed the kiosks at J&R Fleet Services, just east of the junction of Interstates 10 and 15 in Bloomington, California and at the Port of Long Beach, Terminal Access Center in Long Beach, California.

The website is up and running with all of the relevant information displayed in English and in Spanish. Users have been accessing the information from many locations, and new users are added each quarter.

Kiosk Usage Statistics	Quarter 1	Quarter 2
Sessions	87	20
Users	34	10
Page Views	643	109
Pages / Session	7.39	5.45
Avg Session Duration	00:03:18	00:00:48
% New Sessions	29.89%	45%

Benefits

The successful installation of the information kiosks has placed informational resources where the disparate and highly mobile target demographic group frequent and congregate the most. Whether or not the drivers have the time to browse the information where the kiosks stand, they are exposed to the web address and may access the crucial information wherever they have internet connectivity. For the purposes of outreach, this project achieves the goal of providing the best effort to support this community of drivers. For the first time, the small-fleet and single-truck owner operators have a resource to help them advance their small businesses and stay compliant.

The information is structured in a robust way where amendments and changes can be made

rapidly. The way that the project is designed, there can be revisions and changes that can be 'pushed out' to the web site and kiosk in real time.

Project Costs

The original task-based fixed fee contract for the Truck Outreach Centers was for \$150,000. The actual time and expenses GNA dedicated to this contract as of August 25, 2015 is \$239,849.53. The extended period of time to finalize the website and kiosk content was the most critical component of the cost overruns. The timely information on technology, grant funding and regulations requires periodic updates in order to stay current and was supported by an \$8,000 per quarter (\$32,000 per year) budget dedicated toward this task.

Commercialization and Applications

This project has created a platform that can further extend its own outreach.

Creating a list serve

The information can be extended and pushed out to users who opt in to a list serve. This list serve can blast out emails for program announcements about events, training opportunities, changes to regulations, or announcements for funding opportunities. This will gradually build a base of users that can be reached directly.

Mobile friendly web browsing option for the website

Many of the goods movement drivers do not have computers at home, and instead use their phones to access the internet. Formatting the website for "mobile friendly" use would allow drivers greater ease of use to read the content and interact with the website when they are looking at a smaller screen.

Phone App

A phone app platform would provide the most directly accessible information on a smart phone, and would allow the program to interact with the users' phone. It would make it possible for the TIPs program to send 'push' notifications directly to the driver without the driver having to look anything up or sign onto a website. This could be very helpful for program announcements such as funding availability and important due dates and deadlines for programs and regulations.

Appendix D

List of Acronyms

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LIST OF ACRONYMS

AC-absorption chiller AFRC-air/fuel ratio control AFVs—Alternative Fuel Vehicles APCD-Air Pollution Control District AQMD—Air Quality Management District AQMP-Air Quality Management Plan ARB-Air Resources Board ARRA—American Recovery & Reinvestment Act AWMA-Air & Waste Management Association BACT-Best Available Control Technology BSNOx—brake specific NOx BMS—battery management system CAAP-Clean Air Action Plan CAFR-Comprehensive Annual Financial Report CARB-California Air Resources Board CATI-Clean Air Technology Initiative CCF—California Clean Fuels CDFA/DMS—California Department of Food & Agriculture/Division of Measurement Standards CEC-California Energy Commission CE-CERT-College of Engineering - Center for Environmental Research and Technology CEMS-continuous emission monitoring system CFCI-Clean Fuel Connection, Inc. CFD-computational fluid dynamic CNG—compressed natural gas CO₂—carbon dioxide CO-carbon monoxide CRT-continuously regenerating technology DC—direct connection CY-calendar vear DCM-dichloromethane DEG-diesel equivalent gallons DGE-diesel gallon equivalents DF-deterioration factor DMS-Division of Measurement Standards DMV-Department of Motor Vehicles DOC-diesel oxidation catalysts DOE—Department of Energy DOT-Department of Transportation DPF-diesel particulate filters DRI-Desert Research Institute ECM—emission control monitoring EGR-exhaust gas recirculation EPRI-Electric Power Research Institute ESD-emergency shut down EV-electric vehicle FCV—fuel cell vehicle FTA—Federal Transit Administration FTP-federal test procedures

OBD—On-Board Diagnostics g/bhp-hr—grams per brake horsepower per hour GC/MS—gas chromatography/mass spectrometry GGE-gasoline gallon equivalents GHG—Greenhouse Gas GTL-gas to liquid H&SC-California Health and Safety Code HCCI—Homogeneous Charge Combustion Ignition HCNG—hydrogen-compressed natural gas (blend) HDDT—highway dynamometer driving schedule HD-FTP-Heavy-Duty Federal Test Procedure HDV-heavy-duty vehicle HEV—Hybrid electric vehicle HPDI-High Pressure Diesel Injection HT—high throughput HTFCs-high-temperature fuel cells HTPH—high throughput pretreatment and enzymatic hydrolysis ICE-internal combustion engine ICEV----internal combustion engine vehicle ICTC-Interstate Clean Transportation Corridor LCFS-Low Carbon Fuel Standard Li-lithium ion LIMS—Laboratory Information Management System LNG—liquefied natural gas LPG—liquefied petroleum gas or propane LSV-low-speed vehicle MATES—Multiple Air Toxics Exposure Study MECA-Manufacturers of Emission Controls Association MPFI-Multi-Port Fuel Injection MPG-miles per gallon MSRC—Mobile Source Air Pollution Reduction Review Committee MSW-municipal solid wastes MY-model vear MTA-Metropolitan Transportation Authority (Los Angeles County "Metro") NAAQS-National Ambient Air Quality Standards NAFA—National Association of Fleet Administrators NFPA-National Fire Protection Association NCP-nonconformance penalty NEV-neighborhood electric vehicles NextSTEPS—Next Sustainable Transportation Energy Pathways NGV-natural gas vehicle NHTSA—Natural Highway Traffic Safety Administration NMHC-non-methane hydrocarbon NO-nitrogen monoxide NO₂—nitrogen dioxide

LIST OF ACRONYMS (cont'd)

NO+NO₂—nitrous oxide NOPA-Notice of Proposed Award NOx-oxides of nitrogen NREL-National Renewables Energy Laboratory OCTA—Orange County Transit Authority OEM-original equipment manufacturer PAH—polyaromatic hydrocarbons PbA—lead acid PCM—powertrain control module PEMFC—proton exchange membrane fuel cell PEV—plug-in electric vehicle PHEV-plug-in hybrid vehicle PM—particulate matter PM2.5—particulate matter \leq 2.5 microns PM10—particulate matter ≤ 10 microns ppm-parts per million ppb-parts per billion RDD&D (or RD3)-research, development, demonstration and deployment RFS—renewable fuel standards RI-reactive intermediates RRC-rolling resistance co-efficient RTA—Riverside Transit Agency SCAB-South Coast Air Basin or "Basin" SCAQMD-South Coast Air Quality Management District SCE—Southern California Edison SCR-selective catalytic reduction SI-spark ignited SIP—State Implementation Plan SOAs—secondary organic aerosols SoCalGas-Southern California Gas Company (A Sempra Energy Utility) SULEV—super ultra-low emission vehicle TAO—Technology Advancement Office TC-total carbon THC-total hydrocarbons TO-task order tpd-tons per day TRB—Transportation Research Board TSI-Three Squares, Inc. UDDS-urban dynamometer driving schedule µg/m³—microgram per cubic meter U.S.EPA-United States Environmental Protection Agency U.S. —United States ULEV-ultra low emission vehicle VMT-vehicle miles traveled VOC-volatile organic compounds WVU-West Virginia University ZEV-zero emission vehicle



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 41

PROPOSAL: Consider Request by State Senate Environmental Quality Committee for Board to Reconsider December 2015 Amendments to NOx RECLAIM Program

SYNOPSIS: This item is to consider a request by the State Senate Environmental Quality Committee and other members of the state Senate to reconsider the Board's December 2015 amendments to the NOx RECLAIM program. Possible actions include directing staff to notice additional amendments to the NOx RECLAIM program.

COMMITTEE: No Committee Review

Barry R. Wallerstein, D.Env. Executive Officer

KRW:vmr

At the Governing Board meeting on December 4, 2015, the Board adopted amendments to the NOx RELCLAIM program, including a 12 ton-per-day shave of outstanding NOx RECLAIM allocations. In addition, the Governing Board directed staff to return to the NOx RECLAIM Working Group for further discussion and analysis of a staff proposal to address NOx allocations from shutdown facilities. Following that discussion, staff was further directed to bring a shutdown proposal back to the Governing Board for consideration.

Following the December Board meeting, the chair of the state Senate Committee on Environmental Quality sent a letter to Chairman Burke asking that the Governing Board reconsider its vote on the NOx RECLAIM shave. Other members of the Governing Board were copied on the correspondence. Specifically, the Committee and co-signing members of the State Senate requested that the Board consider achieving additional reductions from NOx RECLAIM by adopting an additional 2 tons-per-day of shave, bringing the total shave to 14 tons per day; adopting a provision that recaptured NOx allocations from shutdown facilities; and adopting a schedule for the shave that achieved greater reductions in the earlier years. Adopting these proposals would require the Board to amend the NOx RECLAIM program at a duly noticed public hearing.



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 42

PROPOSAL: Public Employee Compensation/Severance Title: Executive Officer

There is no written material for this item.



BOARD MEETING DATE: March 4, 2016

AGENDA NO. 43

PROPOSAL: Public Employee Compensation Title: Acting Executive Officer

There is no written material for this item.