South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

A G E N D A

MEETING, MARCH 5, 2021

A meeting of the South Coast Air Quality Management District Board will be held at 9:00 AM.

Pursuant to Governor Newsom's Executive Orders N-25-20 (March 12, 2020) and N-29-20 (March 17, 2020), the Governing Board meeting will only be conducted via video conferencing and by telephone. Please follow the instructions below to join the meeting remotely.

ELECTRONIC PARTICIPATION INFORMATION
(Instructions provided at bottom of the agenda)
Join Zoom Meeting - from PC, Laptop or Phone
https://scaqmd.zoom.us/j/93128605044
Meeting ID: **931 2860 5044** (applies to all)
Teleconference Dial In +1 669 900 6833 or +1 253 215 8782
One tap mobile +16699006833,,97364562763# or +12532158782,,93128605044#

Spanish Language Only Audience (telephone)
Número Telefónico para la Audiencia de Habla Hispana
Teleconference Dial In/Numero para llamar: +1 669 900 6833
One tap mobile: +16699006833,,93209559643#
Meeting ID/Identificación de la reunión: 932 0955 9643

Audience will be allowed to provide public comment through telephone or Zoom connection.
PUBLIC COMMENT WILL STILL BE TAKEN

Phone controls for participants:
The following commands can be used on your phone's dial pad while in Zoom Webinar meeting:
- *6 - Toggle mute/unmute
- *9 - Raise hand

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 Procedures	▪ The public meeting of the South Coast AQMD Governing Board begins at 9:00 a.m. The Governing Board generally will consider items in the order listed on the agenda. However, any item may be considered in any order. ▪ 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.

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 at South Coast AQMD's web page (www.aqmd.gov).

Americans with Disabilities Act and Language Accessibility
Disability and language-related accommodations can be requested to allow participation in the Governing Board meeting. The agenda will be made available, upon request, in appropriate alternative formats to assist persons with a disability (Gov. Code Section 54954.2(a)). In addition, other documents may be requested in alternative formats and languages. Any disability or language-related accommodation must be requested as soon as practicable. Requests will be accommodated unless providing the accommodation would result in a fundamental alteration or undue burden to the South Coast AQMD. Please contact the Clerk of the Boards Office at (909) 396-2500 from 7:00 a.m. to 5:30 p.m., Tuesday through Friday, or send the request to cob@aqmd.gov

A webcast of the meeting is available for viewing at:
http://www.aqmd.gov/home/news-events/webcast

Cleaning the air that we breathe...

CALL TO ORDER

- Pledge of Allegiance
- Roll Call
- Swearing in of Newly Appointed Board Member Rex Richardson **Burke**
- Opening Comments: William A. Burke, Ed.D., Chair
  Other Board Members
  Wayne Nastri, Executive Officer

PUBLIC COMMENT PERIOD – (Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3) The public may comment on any subject within the South Coast AQMD's authority that **does not** appear on the agenda, during the Public Comment Period. Each speaker addressing non-agenda items may be limited to a total of (3) minutes.

Staff/Phone (909) 396-

CONSENT AND BOARD CALENDAR (Items 1 through 29)

Note: Consent and Board Calendar items held for discussion will be moved to Item No. 30.

1. Approve Minutes of February 5, 2021 Board Meeting **Thomas/3268**

2. Set Public Hearings April 2, 2021 to Consider Adoption of and/or Amendments to South Coast AQMD Rules and Regulations **Nastri/3131**

   A. Determine That Proposed Amendments to Rule 1426 – Emissions from Metal Finishing Operations and Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, Are Exempt from CEQA, and Amend Rule 1426 and Rule 1469 **Nakamura/3105**

   Proposed Amended Rule 1426 would reduce fugitive emissions of hexavalent chromium, nickel, cadmium, and lead from metal finishing facilities by establishing requirements for building enclosures, housekeeping, and best management practices. Proposed Amended Rule 1469 will incorporate provisions under Proposed Amended Rule 1426 that affect Rule 1469 facilities to streamline implementation for these facilities. Additional amendments to Rule 1469 are proposed to remove reference to a chemical that is no longer used for testing HEPA filters and to update an incorrect table reference. This action is to adopt the Resolution: 1) Determining that the proposed amendments to Rule 1426 – Emissions from Metal Finishing Operations and Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations are exempt from the requirements of the California Environmental Quality Act; and 2) Amending Rule 1426 – Emissions from Metal Finishing Operations and Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. (Reviewed: Stationary Source Committee, February 19, 2021)

B. Certify Final Environmental Assessment and Adopt Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program, and Proposed Rule 316 – Fees for Rule 2305, Submit Rule 2305 for Inclusion Into the SIP, and Approve Supporting Budget Actions **Rees/2856**

Proposed Rule 2305 will require warehouses greater than 100,000 square feet to directly reduce NOx and diesel PM, or to facilitate emission and exposure reductions of these pollutants. The Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program is a menu-based points system that will require warehouse operators to annually earn a specified number of points by completing actions from a menu. Menu items include acquiring or using: Near Zero Emissions (NZE) and/or Zero Emissions (ZE) on-road trucks, ZE cargo handling equipment, ZE charging/fueling infrastructure, solar panels, or particulate filters for nearby sensitive land uses. Alternatively, warehouse operators could prepare and implement a custom plan specific to their site, or they could pay a mitigation fee. Funds from the mitigation fee would be used through future solicitations and Board actions to incentivize the purchase of NZE or ZE trucks and ZE charging/fueling infrastructure in the communities near warehouses that paid the fee. Warehouse owners and operators would also have reporting and recordkeeping requirements. Proposed Rule 316 would establish fees for warehouse operators to fund South Coast AQMD compliance activities. This action is to: 1) Adopt the Resolution: A) Certifying the Final Environmental Assessment for Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program and Proposed Rule 316 – Fees for Rule 2305; B) Adopting Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program and Proposed Rule 316 – Fees for Rule 2305; C) Submitting Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program for inclusion into the SIP; 2) Establish the Rule 2305 Mitigation Fee Alternate Compliance Fund; and 3) Authorize the Executive Officer to recognize upon receipt mitigation fees paid by warehouse operators into the Rule 2305 Mitigation Fee Alternate Compliance Fund. (Reviewed: Mobile Source Committee, February 19, 2021)

Items 3 through 11 Budget/Fiscal Impact

3. Adopt Resolution Recognizing Funds for FY 2020-21 Carl Moyer Program and Issue Program Announcements for Carl Moyer and SOON Programs **Miyasato/3249**

These actions are to adopt a Resolution recognizing up to $35 million in Carl Moyer Program grant funds from CARB with its terms and conditions for FY 2020-21 and issue Program Announcements for "Year 23" of the Carl Moyer Program and SOON Provision to solicit applications for eligible zero and low emitting on- and off-road vehicles and equipment, including marine vessels and locomotives, and infrastructure for near-zero and zero emission vehicles and equipment. (Reviewed: Technology Committee, February 19, 2021; Recommended for Approval)

4 Amend Contracts for Enhanced Fleet Modernization Program and Execute Contract for Program Support **Miyasato/3249**

Since 2015, the South Coast AQMD has been implementing an Enhanced Fleet Modernization Program (EFMP), branded as Replace Your Ride. The program is administered with assistance from three contractors providing case management and remote sensing technical support. These actions are to amend contracts with three consultants to add funds for continued program support and execute a contract to provide income verification service for the program, both using funds from the HEROS II Special Revenue Fund (56). (Reviewed: Technology Committee, February 19, 2021; Recommended for Approval)

5. Execute Contracts for Hydrogen Infrastructure Projects and Fuel Cell Microgrid Study **Miyasato/3249**

Research and development in the area of hydrogen infrastructure and microgrids is important as fuel cell technology transitions from light- to medium- and heavy-duty vehicles. These actions are to support High Flow Bus Fueling Protocol Development with Frontier Energy, Inc. in an amount not to exceed $25,000, support California Heavy-Duty Hydrogen Infrastructure Research with National Renewable Energy Laboratory (NREL) in an amount not to exceed $25,000 and support California Hydrogen Systems Analysis with University of California, Davis (UC Davis) in an amount not to exceed $50,000 from the Clean Fuels Program Fund (31). The University of California, Irvine Advanced Power and Energy Program (UCI APEP) proposes a study to identify and quantify the steps required for wider deployment of microgrids using fuel cell technology. This action is also to execute a contract with UCI APEP to study fuel cell microgrid technology in an amount not to exceed $370,000 from the Clean Fuels Program Fund (31). (Reviewed: Technology Committee, February 19, 2021; Recommended for Approval)

6. Amend Contract for Kore Infrastructure Project **Miyasato/3249**

In June 2020, the Board approved a contract amendment for Kore Infrastructure LLC (Kore) for a Renewable Natural Gas Commercial Field Test project, including construction of a pyrolysis system on Southern California Gas Company property in Los Angeles. The project is to test various biomass feedstocks for commercial production of renewable natural gas. This action is to amend the contract with Kore to extend the deadline to complete construction, commissioning and testing efforts by October 1, 2021. (Reviewed: Technology Committee, February 19, 2021; Recommended for Approval)

7. Approve South Coast AQMD Annual Investment Policy and Delegation of Authority to Appointed Treasurer to Invest South Coast AQMD Funds **Jain/2804**

The South Coast AQMD adopts an annual investment policy which, if done, must be considered at a public meeting of the Board. State law additionally requires South Coast AQMD to annually renew its delegation of authority to its treasurer to invest or to reinvest funds of the local agency. This action is to approve the Annual Investment Policy and the Resolution to renew delegation of authority to the Los Angeles County Treasurer to invest and reinvest South Coast AQMD funds. (Reviewed: Investment Oversight Committee, February 19, 2021; Recommended for Approval)

8. Authorize Purchase of Maintenance and Support Services for Servers and Storage Devices **Moskowitz/3329**

The servers and storage devices are used by enterprise-level software applications that currently support the Clean Air Support System for all South Coast AQMD core activities. Maintenance support for these systems will expire on April 30, 2021. This action is to obtain approval for the sole source purchase of hardware and software maintenance and support services for servers and storage devices from Hewlett Packard Enterprise Company for one year, in an amount not to exceed $120,000. Funds for these purchases are included in Information Management's FY 2021-22 Budget. (Reviewed: Administrative Committee, February 12, 2021; Recommended for Approval)

9. Issue RFP for Cybersecurity Assessment **Moskowitz/3329**

South Coast AQMD is seeking a vendor to perform a comprehensive cybersecurity assessment that will identify any potential cybersecurity risks and recommend changes to align with industry standards and peer organizations. The Assessment will also provide a roadmap to risk mitigation and cybersecurity program maturity. This action is to issue an RFP to solicit proposals from qualified vendors to conduct this assessment. Funds for this project, not to exceed $100,000, would come from the General Fund Undesignated (Unassigned) Fund Balance. (Reviewed: Administrative Committee, February 12, 2021; Recommended for Approval)

10. Add Positions to FY 2020-21 Budget to Address Operational Needs **Olvera/2309**

This item is to amend the FY 2020-21 Budget to add a Senior Public Affairs Manager position and a Secretary position in the Legislative, Public Affairs, and Media department to administer its AB 617 Outreach program, and provide support to other environmental justice programs. This item is also to add a Senior Administrative Secretary to the FY 2020-21 Budget to provide administrative support for the newly appointed Deputy Executive Officer for Diversity, Equity and Inclusion. Funding for these positions are available in the FY 2020-21 Budget and will be requested in future budgets. (Reviewed: Administrative Committee, February 12, 2021; Recommended for Approval)

11. Approve Funds for Additional Batteries for Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program **Miyasato/3249**

In October 2017, the Board recognized funds from U.S. EPA's 2016 Targeted Air Shed Grant Program for the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program. Due to the continued high demand, staff is requesting approval for the use of $50,000 from the Rule 2202 AQIP Special Revenue Fund (27) to provide a 75 percent discount for additional batteries for equipment funded under the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program. (No Committee Review)

Item 12 - Action Item/No Fiscal Impact

12. Annual Meeting of the Health Effects of Air Pollution Foundation **Gilchrist/3459**

This item is to conduct the annual meeting of the Health Effects of 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 13 through 20 - Information Only/Receive and File

13. Legislative, Public Affairs and Media Report **Alatorre/3122**

This report highlights the January 2021 outreach activities of the Legislative, Public Affairs and Media Office, which includes: Major Events, Community Events/Public Meetings, Environmental Justice Update, Speakers Bureau/Visitor Services, Communications Center, Public Information Center, Business Assistance, Media Relations and Outreach to Business and Federal, State and Local Government. (No Committee Review)

14. Hearing Board Report **Prussack/2500**

This reports the actions taken by the Hearing Board during the period of January 1 through January 31, 2021. (No Committee Review)

15. Civil Filings and Civil Penalties Report **Gilchrist/3459**

This reports the monthly penalties from January 1, 2021 through January 31, 2021, and legal actions filed by the General Counsel's Office from January 1, through January 31, 2021. An Index of South Coast AQMD Rules is attached with the penalty report. (Reviewed: Stationary Source Committee, February 19, 2021)

16. Lead Agency Projects and Environmental Documents Received **Nakamura/3105**

This report provides a listing of CEQA documents received by the South Coast AQMD between January 1, 2021 and January 31, 2021, and those projects for which the South Coast AQMD is acting as lead agency pursuant to CEQA. (Reviewed: Mobile Source Committee, February 19, 2021)

17. Rule and Control Measure Forecast **Rees/2856**

This report highlights South Coast AQMD rulemaking activities and public hearings scheduled for 2021. (No Committee Review)

18. Report of RFQs Scheduled for Release in March **Jain/2804**

This report summarizes the RFQs for budgeted services over $100,000 scheduled to be released for advertisement for the month of March. (Reviewed: Administrative Committee, February 12, 2021)

19. FY 2020-21 Contract Activity **Jain/2804**

This report lists the number of contracts let during the first six months of FY 2020-21, the respective dollar amounts, award type, and the authorized contract signatory for the South Coast AQMD. (No Committee Review)

20. Status Report on Major Ongoing and Upcoming Projects for Information Management **Moskowitz/3329**

Information Management is responsible for data systems management services in support of all South Coast AQMD operations. This item is to provide the monthly status report on major automation contracts and planned projects. (Reviewed: Administrative Committee, February 12, 2021)

Item 21 - Staff Presentation/Board Discussion

21. Budget and Economic Outlook Update *(Presentation in Lieu of Board Letter)* **Whynot/3104**

Staff will provide an update on economic indicators and key South Coast AQMD metrics. (Reviewed: Administrative Committee, February 12, 2021) (Receive & File)

Items 22 through 29 - Reports for Standing Committees and CARB

22.	Administrative Committee (Receive & File)	**Chair: Burke**	**Nastri/3131**
23.	Investment Oversight Committee (Receive & File)	**Chair: Cacciotti**	**Jain/2804**
24.	Legislative Committee	**Chair: Cacciotti**	**Alatorre/3122**

Receive and file; and take the following actions as recommended:

Agenda Item	**Recommendation**
H.R. 283 (Schweikert and Cardenas) Crowdsourcing of Environmental Data Act of 2021	Work With Author
S. 101 (Markey and Duckworth) Environmental Justice Mapping and Data Collection Act of 2021	Support With Amendments

25.	Mobile Source Committee (Receive & File)	**Chair: Burke**	**Rees/2856**
26.	Stationary Source Committee (Receive & File)	**Chair: Benoit**	**Dejbakhsh/2618**
27.	Technology Committee (Receive & File)	**Chair: Buscaino**	**Miyasato/3249**
28.	Mobile Source Air Pollution Reduction Review Committee (Receive & File)	**Board Liaison: Benoit**	**Miyasato/3249**
29.	California Air Resources Board Monthly Report (Receive & File)	**Board Rep: Kracov**	**Thomas/2500**

30. Items Deferred from Consent and Board Calendars

PUBLIC HEARINGS

31. Determine That Proposed Amended Rule 218 - Continuous Emission Monitoring; Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications, Are Exempt from CEQA; Amend Rule 218; and Adopt Rules 218.2 and 218.3 **Nakamura/3105**

Proposed Amended Rule 218 (PAR 218) will provide a phase-out provision to transition facilities into the revised provisions for CEMS which are specified in Proposed Rules 218.2 and 218.3 (PR 218.2 and PR 218.3). PR 218.2 and PR 218.3 will establish specifications for installation and operation for continuous emission monitoring system (CEMS) at non-RECLAIM and former RECLAIM facilities. PR 218.2 and PR 218.3 specify performance requirements for certification and quality assurance of CEMS that are used to continuously measure pollutant concentrations for compliance with rule limits and/or permit requirements. This action is to adopt the Resolution: 1) Determining that Proposed Amended Rule 218 - Continuous Emission Monitoring, Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions; and Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications; are exempt from the requirements of the California Environmental Quality Act; and 2) Amending Rule 218 - Continuous Emission Monitoring; and Adopting Rule 218.2 - Continuous Emission Monitoring System: General Provisions; and Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications. (Reviewed: Stationary Source Committee, January 22, 2021)

32. Approve and Adopt Technology Advancement Office Clean Fuels Program 2020 Annual Report and 2021 Plan Update, Resolution and Membership Changes for Clean Fuels Advisory Group and Receive and File Updated Membership of Technology Advancement Advisory Group **Miyasato/3249**

Each year by March 31, the South Coast AQMD must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year for the Clean Fuels Program. This action is to approve and adopt the Technology Advancement Clean Fuels Program Annual Report for 2020 and 2021 Plan Update and the Resolution finding that proposed projects do not duplicate any past or present programs. These actions are to also approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group and receive and file membership changes to the Technology Advancement Advisory Group. (Reviewed: Technology Committee, February 19, 2021; Recommended for Approval)

33. Annual RECLAIM Audit Report for 2019 Compliance Year **Dejbakhsh/2618**

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-sixth year of this program. Recent trends in trading future year RTCs are analyzed and presented in this report. A list of facilities that did not reconcile their emissions for the 2019 Compliance Year is also included in the report. (Reviewed: Stationary Source Committee, February 19, 2021).

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*) **Gilchrist/3459**

CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION

It is necessary for the Board to recess to closed session 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 SCAQMD is a party. The actions are:

- Communities for a Better Environment v. SCAQMD, Los Angeles Superior Court Case No. BS161399 (RECLAIM);
- Communities for a Better Environment v. South Coast Air Quality Management District, Los Angeles Superior Court Case No. 19STCP05239 (Tesoro II);
- People of the State of California, ex rel. SCAQMD v. Exide Technologies, Inc., Los Angeles Superior Court Case No. BC533528;
- In re: Exide Technologies, Inc., U.S. Bankruptcy Court, District of Delaware, Case No. 13-11482 (KJC) (Bankruptcy Case); Delaware District Court, Case No.: 19-00891 (Appellate Case); United States Court of Appeals, Third Circuit, Case No. 20-1858;
- In re: Exide Holdings Inc., U.S. Bankruptcy Court, District of Delaware, Case No. 20-11157 (CSS) (Bankruptcy Case);
- In the Matter of SCAQMD v. Southern California Gas Company, Aliso Canyon Storage Facility, SCAQMD Hearing Board Case No. 137-76 (Order for Abatement); People of the State of California, ex rel SCAQMD v. Southern California Gas Company, Los Angeles Superior Court Case No. BC608322; Judicial Council Coordinated Proceeding No. 4861;
- In the Matter of SCAQMD v. Torrance Refining Company, LLC, SCAQMD Hearing Board Case No. 6060-5 (Order for Abatement);
- CalPortland Company v. South Coast Air Quality Management District; Governing Board of the South Coast Air Quality Management District; and Wayne Nastri, Executive Officer, and Does 1-100, San Bernardino County Superior Court, Case No. CIV DS 19258941;
- Downwinders at Risk et al. v. EPA, United States Court of Appeals, Ninth Circuit, Case No. 19-1024 (consolidated with Sierra Club, et al. v. EPA, No. 15-1465);

- SCAQMD, et al. v. Elaine L. Chao, et al., District Court for the District of Columbia, Case No. 1:19-cv-03436-KBJ

- SCAQMD, et al. v. EPA, United States Court of Appeals, D.C. Circuit, Case No. 19-1241 (consolidated with Union of Concerned Scientists v. NHTSA, No. 19-1230)

- SCAQMD, et al. v. NHTSA, EPA, et al., United States Court of Appeals, D.C. Circuit, Filed May 28, 2020

- Association of Irritated Residents v. U.S. EPA, SCAQMD, SJVUAPCD, et al., United States Court of Appeals, D.C. Circuit, Case No. 19-71223; and

- SCAQMD v. City of Los Angeles, Los Angeles City Council, City of LA Harbor Dept., LA Board of Harbor Commissioners, et al., Los Angeles Superior Court, Case No. 20STCP02985.

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 (four cases).

CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

Also, it is necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(d)(2) to confer with its counsel because there is a significant exposure to litigation against the SCAQMD (two cases).

Letter from Steven J. Olson, O'Melveny & Myers LLP, on behalf of ExxonMobil Corporation, dated August 22, 2018.

CONFERENCE WITH LABOR NEGOTIATORS

It is also necessary to recess to closed session pursuant to Government Code Section 54957.6 to confer with labor negotiators:

- Agency Designated Representative: A. John Olvera, Deputy Executive Officer – Administrative & Human Resources; and
- Employee Organization(s): South Coast AQMD Professional Employees Association

ADJOURNMENT

PUBLIC COMMENTS

Members of the public are afforded an opportunity to speak on any agenda item before consideration of that item. Persons wishing to speak may do so remotely via Zoom or telephone. To provide public comments via a Desktop/Laptop or Smartphone, click on the "Raise Hand" at the bottom of the screen, or if participating via Dial-in/Telephone Press *9. This will signal to the host that you would like to provide a public comment and you will be added to the list.

All agendas are posted at South Coast AQMD Headquarters, 21865 Copley Drive, Diamond Bar, California, at least 72 hours in advance of the meeting. At the beginning of the agenda, an opportunity is also provided for the public to speak on any subject within the South Coast AQMD's authority. Speakers may be limited to a total of three (3) minutes for the entirety of the Consent Calendar plus Board Calendar, and three (3) minutes or less for each of the other agenda items.

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 the Public Comment Period 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. Individuals who wish to submit written or electronic comments must submit such comments to the Clerk of the Board, South Coast AQMD, 21865 Copley Drive, Diamond Bar, CA 91765-4178, (909) 396-2500, or to cob@aqmd.gov, on or before 5:00 p.m. on the Tuesday prior to the Board meeting.

ACRONYMS

AQ-SPEC = Air Quality Sensor Performance Evaluation Center
AQIP = Air Quality Investment Program
AQMP = Air Quality Management Plan
AVR = Average Vehicle Ridership
BACT = Best Available Control Technology
BARCT = Best Available Retrofit 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
DOE = Department of Energy
EV = Electric Vehicle
EV/BEV = Electric Vehicle/Battery 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
PEV = Plug-In Electric Vehicle
PHEV = Plug-In Hybrid Electric Vehicle
PM10 = Particulate Matter $\leq$ 10 microns
PM2.5 = Particulate Matter $\leq$ 2.5 microns
RECLAIM=Regional Clean Air Incentives Market
RFP = Request for Proposals
RFQ = Request for Quotations
RFQQ=Request for Qualifications and 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
ZEV = Zero Emission Vehicle

INSTRUCTIONS FOR ELECTRONIC PARTICIPATION

Instructions for Participating in a Virtual Meeting as an Attendee
As an attendee, you will have the opportunity to virtually raise your hand and provide public comment.

Before joining the call, please silence your other communication devices such as your cell or desk phone. This will prevent any feedback or interruptions during the meeting.

For language interpretation:
Click the interpretation Globe icon at the bottom of the screen
Select the language you want to hear (either English or Spanish)
Click "Mute Original Audio" if you hear both languages at the same time.

Para interpretación de idiomas:
Haga clic en el icono de interpretación el globo terráqueo en la parte inferior de la pantalla
Seleccione el idioma que desea escuchar (inglés o español)
Haga clic en "Silenciar audio original" si escucha ambos idiomas al mismo tiempo.

Please note: During the meeting, all participants will be placed on Mute by the host. You will not be able to mute or unmute your lines manually.

After each agenda item, the Chairman will announce public comment.

Speakers may be limited to a total of 3 minutes for the entirety of the consent calendar plus board calendar, and three minutes or less for each of the other agenda items.

A countdown timer will be displayed on the screen for each public comment.

If interpretation is needed, more time will be allotted.

Once you raise your hand to provide public comment, your name will be added to the speaker list. Your name will be called when it is your turn to comment. The host will then unmute your line.

Directions for Video ZOOM on a DESKTOP/LAPTOP:

- If you would like to make a public comment, please click on the **"Raise Hand"** button on the bottom of the screen. This will signal to the host that you would like to provide a public comment and you will be added to the list.

Directions for Video Zoom on a SMARTPHONE:

- If you would like to make a public comment, please click on the **"Raise Hand"** button on the bottom of your screen.
- This will signal to the host that you would like to provide a public comment and you will be added to the list.

Directions for TELEPHONE line only:

- If you would like to make public comment, please **dial *9** on your keypad to signal that you would like to comment.

Directions for Spanish Language TELEPHONE line only:

- The call in number is the same.
- The meeting ID number is 932-0955-9643
- If you would like to make public comment, please **dial *9** on your keypad to signal that you would like to comment.

Instrucciones para la línea de TELÉFONO en español únicamente:

- El número de llamada es el mismo (+1 669900 6833 o +1 253215 8782).
- El número de identificación de la reunión es 932-0955-9643
- Si desea hacer un comentario público, marque *9 en su teclado para indicar que desea comentar.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 1

MINUTES: Governing Board Monthly Meeting

SYNOPSIS: Attached are the Minutes of the February 5, 2021 meeting.

RECOMMENDED ACTION:
Approve Minutes of the February 5, 2021 Board Meeting.

Faye Thomas
Clerk of the Boards

FT:cmw

FRIDAY, FEBRUARY 5, 2021

Notice having been duly given, the regular meeting of the South Coast Air Quality Management District Board was conducted remotely via videoconferencing and telephone. Members present:

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

Mayor Pro Tem Ben Benoit, Vice Chairman
Cities of Riverside County

Supervisor Lisa A. Bartlett
County of Orange

Council Member Joe Buscaino
City of Los Angeles

Mayor Pro Tem Michael A. Cacciotti
Cities of Los Angeles County – Eastern Region

Senator Vanessa Delgado (Ret.)
Senate Rules Committee Appointee

Gideon Kracov
Governor's Appointee

Supervisor Sheila Kuehl
County of Los Angeles

Mayor Pro Tem Larry McCallon
Cities of San Bernardino County

Council Member Judith Mitchell (Ret.)
Cities of Los Angeles County – Western Region

Supervisor V. Manuel Perez
County of Riverside

Mayor Pro Tem Carlos Rodriguez
Cities of Orange County

Supervisor Janice Rutherford
County of San Bernardino

Members absent: None

CALL TO ORDER: Chairman Burke called the meeting to order at 9:00 a.m.

- Pledge of Allegiance: Led by Council Member Mitchell

- Roll Call

  Senator Delgado joined the meeting at approximately 9:05 a.m.
  Supervisor Rutherford joined the meeting at approximately 9:10 a.m.

- Retirement Presentation to Board Member Judy Mitchell

  Chairman Burke announced that a retirement award had been sent to Council Member Mitchell's home and a compilation video had been prepared featuring farewell and thank you messages from colleagues and staff. He also announced that conference room CC-8 at the South Coast AQMD will be renamed in her honor to recognize her years of service and dedication to the Board.

  Council Member Mitchell introduced and welcomed her replacement on the Board, Long Beach Vice Mayor Rex Richardson, and highlighted his accomplishments.

  Vice Mayor Richardson expressed appreciation for the introduction and stated that he looks forward to serving on the Board and working with fellow Board members to clean the air and ensure that communities can thrive.

  Board Members congratulated Council Member Mitchell on her retirement, expressed gratitude for her hard work and dedication over the years and reflected on her extensive career in public service.

  Council Member Mitchell expressed appreciation for the honor, thanked staff for their hard work and shared memories of current and former Board members she served with over the past decade. She praised Chairman Burke's leadership and legacy at the agency and recommended renaming the South Coast AQMD auditorium in his honor. Several Board Members concurred with her recommendation.

- Opening Comments

  Mayor Pro Tem Cacciotti shared photos of a commercial electric lawn and garden equipment demonstration event at Jurupa Hills High School that he attended; reported that Compton Unified School District had recently made a large purchase of electric lawn and garden equipment; offered to hold a demonstration event in Yorba Linda and thanked staff for supporting the program. He also commented on the number of warehouses he observed during his visit to the Inland Empire.

Mayor Pro Tem McCallon shared photos of the San Gabriel Mountains and Mt. Baldy following recent storms to highlight clear skies and the progress that South Coast AQMD has made toward clean air but recognized there is still more work to be done. He inquired about the availability of the MATES V final report.

Wayne Nastri, Executive Officer, responded the report is expected to be available in the Spring of this year and the results will be presented to the appropriate Board committee.

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

Barbara Jackson, Bellflower resident and Phillips 66 Refinery employee
Charlie Sandoval, Gardena resident and Phillips 66 Refinery employee
Owen Heminger, Los Angeles resident and Phillips 66 Refinery employee
Commented on their career and personal experiences as an employee of Phillips 66. The refineries provide well-paying jobs across all skill levels that support families and are committed to ensuring the safety and well-being of their employees, the community and environment. Employees are also committed to ensuring safe, reliable and responsible operations.

Sarah Wiltfong, Los Angeles County Business Federation (BizFed)
Ron Miller, Los Angeles/Orange Counties Building & Construction Trades Council
Rita Loof, RadTech International
Patty Senecal, Western States Petroleum Association (WSPA)
Curt Coleman, Southern California Air Quality Alliance
Congratulated Council Member Mitchell and expressed gratitude for her work on the boards of the South Coast AQMD and CARB and her willingness to meet and engage on complex issues. Welcomed Vice Mayor Richardson and Supervisor Kuehl and congratulated Board Member Kracov on his appointment to the CARB Board.

Alyssa Bell, Emily Spokes, Jessica Craven, Amy Francis, and Carolina Forni of the North East Los Angeles (NELA) Climate Collective expressed appreciation to Council Member Mitchell for her service and congratulated Vice Mayor Richardson on his appointment to the Board. Expressed concerns about the impact of climate change and wildfires on air quality, and the link between air pollution and COVID health disparities in low-income communities and communities of color. Thanked Mayor Pro Tem Cacciotti for his presentations on electric lawn and garden equipment but stated that more needs to be done to replace gas-powered leaf blowers; expressed gratitude to staff for their presentation at a recent environmental workshop in Highland Park. Urged the Board to adopt a strong Indirect Source Rule (ISR) for warehouses.

Fabian Wesson, a member of the public, thanked Council Member Mitchell for supporting Black employees at South Coast AQMD and welcomed Vice Mayor Richardson. She reiterated her previous request for a progress report on diversity, equity and inclusion efforts at the South Coast AQMD and the need for an open and transparent process.

Steven Goldsmith, Torrance Refinery Action Alliance (TRAA), thanked Council Member Mitchell for strongly supporting the ban of hydrofluoric acid (HF). He stated that the Torrance Refining Company and Valero Refinery have performed little or no safety enhancements since the Board approved their proffer letters in September 2019. Expressed concern with the potential release of HF that would have a catastrophic impact on surrounding communities, noting there are commercially available safer alternatives to HF/modified HF. Urged the Board to rescind the 2019 proffer agreements and return to the rulemaking process.

Daniela Arellano, Martina and Alucard (Los Feliz Charter School for the Arts students and members of the Youth Environmental Leadership Club)

Expressed concern for themselves as well as family and friends who suffer from respiratory illnesses due to poor air quality. Noted the increased number of days with unhealthful air quality last year that prevented children from playing outside. Stressed the importance of adopting a strong ISR.

Maggie Ineno, A Blue Sky Foundation, commented on an initiative to ban the use of combustion-powered leaf blowers in Calabasas and offered to meet with staff to discuss a plan.

Dr. Genghmun Eng, TRAA, thanked Council Member Mitchell for helping the community and her years of public service. He commented on the cause of the June 21, 2019 Philadelphia Energy Solutions Refinery explosion that triggered the release of HF into the atmosphere and urged for a ban on HF to prevent this from happening again.

Ranji George, Coalition for Advancement to Promote Zero-Emission Technologies, commented on Harvey Eder's advocacy for solar energy over the years and a petition that Mr. Eder attempted to file in court. Thanked Chairman Burke and Council Member Mitchell for their many years of public service.

Al Sattler, a member of the public, thanked Council Member Mitchell for her years of public service advocating for clean air and public health. He commented on the 2015 ExxonMobil Refinery explosion in Torrance that narrowly missed hitting a tank containing MHF that could have had deadly consequences. It is time for the refineries to convert to safer alkylation alternatives that are currently available. These alternatives would be much safer for refinery workers and would not result in job loss.

Elise Kalfayan, Glendale resident/member of Glendale Environmental Coalition
Michelle Lewis, Long Beach resident
Jessie Parks, Student and Riverside resident
Kyler Chin, Irvine high school student/Sunrise Movement Los Angeles
Commented on the growth of e-commerce and the warehouse industry that results in more air pollution. Expressed support for a strong warehouse ISR and electrification of warehouse operations.

Gabriela Mendez, Center for Community Action and Environmental Justice, thanked Council Member Mitchell for supporting the community and wished her well. She emphasized the need for a strong warehouse ISR and noted the harmful effects to the people and environment in the Inland Empire region from the warehouse industry.

Nancy Matson, a member of the public, congratulated Council Member Mitchell. She expressed support for a strong warehouse ISR; commented on the increase in ozone levels in 2020 and the relationship between the climate and air pollution; and noted that indoor air quality is as much a concern as outdoor air quality.

Chris Chavez, Coalition for Clean Air/AB 617 Community Steering Community Member, thanked Council Member Mitchell for her years of service, welcomed Vice Mayor Richardson, thanked Board Members who attended the recent Southeast Los Angeles Community Steering Committee meeting, and extended an invitation to attend the February 11 Community Steering Committee meeting for the Wilmington, Carson, West Long Beach community. He commented on the large number of container ships idling off the Southern California coast and requested that staff provide information to the public about the adverse health impacts of emissions from ships. He also expressed support for strong rules that reduce air pollution from warehouses and oil refineries in low-income communities and communities of color.

Board Member Kracov inquired about South Coast AQMD's authority to regulate emissions from ships, given their adverse health effects and impact on attainment of the NOx standard.

Mr. Nastri responded that the South Coast AQMD does not have direct authority to regulate emissions from ships but has authority to investigate and enforce sources of odor nuisance if complaints are received from residents in the surrounding communities. Staff will reach out to U.S. EPA and CARB to see what can be done and continue to engage in discussions with the ports. Mr. Nastri also mentioned that the congestion at the ports is due to the tremendous demand for goods, as well as a shortage of longshore workers who have been infected with the COVID virus.

Charlie Clinton, Torrance resident/TRAA, commented on the report released by the Torrance Refining Company and Valero Refinery in January 2021 on their progress in implementing the safety measures contained in the September 2019 proffer letters. He stated that the report confirms that the information on the safety enhancements is largely narrative and not quantitative. The report also ignores commercially available alternatives that are safer.

Thomas Jelenic, Pacific Merchant Shipping Association, thanked Council Member Mitchell for her years of service on the Board and congratulated Vice Mayor Richardson on his appointment to the Board. He stated that the proposed ISR does not offer meaningful emission reductions beyond the regulatory proposals that have already been put forward by CARB. He looks forward to working with the Board on this issue.

Ivette Torres, Center for Community Action and Environmental Justice, commented on a proposed warehouse development project in the Inland Empire that will displace approximately 200 residents. She expressed support for a strong warehouse ISR and refinery rule (Proposed Rule 1109.1 - Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Industries), noting that both rules are identified as air quality priorities in AB 617 Community Emission Reduction Plans.

Harvey Eder, Public Solar Power Coalition, expressed appreciation to the NELA Climate Collective for their comments; urged support for solar technologies; expressed opposition to the time limit on public comments; and commented on difficulties he experienced filing legal documents in federal court.

Byron Chan, Earthjustice, thanked Council Member Mitchell for her service and welcomed Vice Mayor Richardson to the Board. He urged the Board to adopt a strong Rule 1109.1 to require refineries to install pollution controls. The refineries have avoided installing such equipment through their participation in the RECLAIM program. A strong refinery rule is needed given the immense health benefits that will be derived in the environmental justice communities of Wilmington, Carson and Long Beach.

Peter Herzog, NAIOP/Commercial Real Estate Development Association, wished Council Member Mitchell well, welcomed Vice Mayor Richardson and congratulated Board Member Kracov on his appointment to the CARB Board. He noted the progress that has been made towards achieving clean air due to the commitment and actions that have been taken over the years, including efforts taken by the trucking industry that have significantly decreased diesel particulate matter. He stressed the need to use the best science to develop regulations and ensure those regulations are practical and technologically feasible.

Frances Keeler, California Council for Environmental & Economic Balance (CCEEB), expressed pleasure at working with Council Member Mitchell over the years. CCEEB looks forward to working with South Coast AQMD to identify creative solutions and resolve many complex issues to make sure that rules are effective.

Mark Abramowitz, former Governing Board Consultant, thanked Council Member Mitchell for everything she has done for air quality.

Comment Letters Re: Warehouse Indirect Source Rule Submitted by:

Rachel Paige, Los Angeles resident
Kendall James, University of California, Santa Barbara student
Ann Dorsey, Northridge resident

CONSENT CALENDAR

1. Approve Minutes of January 8, 2021 Board Meeting

2. Set Public Hearing March 5, 2021 to Consider Adoption of and/or Amendments to South Coast AQMD Rules and Regulations

   Determine That Proposed Amended Rule 218 - Continuous Emission Monitoring; Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions; and Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications; Are Exempt from CEQA; Amend Rule 218; and Adopt Rules 218.2 and 218.3

Budget/Fiscal Impact

3. Execute Contract for the Volkswagen Environmental Mitigation Trust Program – Combustion Freight and Marine Projects Category and Amend Contract for Outreach and Other Program-Related Support

4. Amend AB 1318 Mitigation Fees Fund Contract with Coachella Valley Association of Governments

5. Recognize Revenue, Appropriate Funds, Execute Purchase Orders and Contracts to Design and Develop a Mobile Air Toxics Measurement Platform

6. Renew South Coast AQMD's Membership in CaFCP for Calendar Year 2021 and Receive and File California Fuel Cell Partnership Executive Board Meeting Agenda and Activity Updates

7. Appropriate Funds and Amend or Execute Contracts with Outside Counsel and Specialized Legal Counsel and Services

8. Appropriate Funds and Amend or Initiate Contracts with Outside Counsel and Specialized Legal Counsel and Services

9. Receive and File Annual Report on 457 Deferred Compensation Plan, Appoint Member to Deferred Compensation Plan Committee, and Issue RFP for Deferred Compensation Plan Administrator Services

Items 10 through 16 – Information Only/Receive and File

10. Legislative, Public Affairs and Media Report

11. Hearing Board Report

12. Civil Filings and Civil Penalties Report

13. Lead Agency Projects and Environmental Documents Received

14. Rule and Control Measure Forecast

15. Status Report on Major Ongoing and Upcoming Projects for Information Management

16. Status Report on Regulation XIII – New Source Review

Bayron Gilchrist, General Counsel, noted that Supervisor Perez would like to identify for the record that he is a member of the Coachella Valley Association of Governments, which is involved in Item No. 4.

(Chairman Burke left the meeting, due to connectivity issues)

Due to a number of requests to speak received on Consent and Board Calendar items, the vote on the Consent and Board Calendar was deferred until after those comments were made.

17. Items Deferred from Consent Calendar

BOARD CALENDAR

18. Administrative Committee

19. Mobile Source Committee

20. Stationary Source Committee

21. Legislative Committee

22. Technology Committee

(Council Member Buscaino left the meeting.)

MOVED BY MCCALLON, SECONDED BY KUEHL, AGENDA ITEMS 1 THROUGH 16, 18 THROUGH 20 AND 22, APPROVED AS RECOMMENDED, AND TO RECEIVE AND FILE THE COMMITTEE REPORTS, BY THE FOLLOWING VOTE:

AYES:	Bartlett, Benoit, Cacciotti, Delgado, Kracov, Kuehl, McCallon, Mitchell, Perez, Rodriguez, and Rutherford
NOES:	None
ABSENT:	Burke and Buscaino

Agenda Item No. 21 was withheld for comment and discussion.

21. Legislative Committee

Lisa Tanaka O'Malley, Senior Public Affairs Manager, provided a brief overview of H.R. 7024 and H.R. 8775 and noted that staff is recommending a support position on both legislative bills.

Kyler Chin
Al Sattler
Expressed support for both legislative bills.

MOVED BY PEREZ, SECONDED BY CACCIOTTI, AGENDA ITEM 21, APPROVED AS RECOMMENDED, TO RECEIVE AND FILE THE LEGISLATIVE COMMITTEE REPORT, AND APPROVE THE LEGISLATIVE COMMITTEE'S RECOMMENDATION ON LEGISLATION AS SET FORTH BELOW, BY THE FOLLOWING VOTE:

AYES: Bartlett, Benoit, Cacciotti, Delgado, Kracov, Kuehl, McCallon, Mitchell, Perez, Rodriguez and Rutherford

NOES: None

ABSENT: Burke and Buscaino

LEGISLATIVE COMMITTEE RECOMMENDATIONS

Agenda Item	**Recommendation**
H.R. 7024 (Barrágan) Climate Smart Ports Act of 2020	Support
H.R. 8775 (Ruiz) Salton Sea Public Health and Environmental Protection Act of 2020	Support

Staff Presentations/Board Discussion

23. Budget and Economic Outlook Update ***(Presentation In Lieu of Board Letter)***

Jill Whynot, Chief Operating Officer, gave an overview of the presentation on Item No. 23 to provide an update on economic indicators and South Coast AQMD metrics and economic implications.

Board member Kracov inquired about the overall conclusion to draw from the data on potentially expired permits.

Ms. Whynot responded that most of the potentially expired permits are getting paid and only a small percentage are not being reinstated.

In response to Board Member Kracov's question regarding the number of permit applications that are processed in an average year, Amir Dejbakhsh, DEO/Engineering and Permitting, responded that South Coast AQMD typically receives 6,000 to 8,000 permit applications per year.

Chairman Burke noted that the number of expired permits is decreasing and businesses still have a year to renew.

Mayor Pro Tem Cacciotti inquired about the size and types of businesses that have expired permits.

Ms. Whynot noted that potentially expiring permits are predominantly small businesses such as spray booth operations, asbestos negative air machines, and dry cleaners that are changing out their perchloroethylene equipment. There are also miscellaneous industries, including government and academic institutions that are late in paying their permit renewal fees.

Supervisor Bartlett added that small businesses are experiencing financial hardship during the pandemic due to the restrictions on their operations and may not be able to pay their permit fees. Counties across the state are trying to do what they can through grant programs to help small businesses.

Mayor Pro Tem Rodriguez asked whether data collected for permit fees identify minority-owned businesses and if those businesses are disproportionately impacted.

Ms. Whynot responded that the data collected identifies small businesses; however, demographic data on the ethnicity of permit applicants may not be available.

Board Member Kracov inquired about the status of the permit backlog.

Ms. Whynot noted that staff are still working on permits while teleworking and continue to make incremental progress in reducing the backlog.

Mr. Eder commented on job losses and the financial hardships impacting small businesses due to the pandemic. He also commented on the solar new deal and expressed concerns about climate change, obesity, COVID-19 and other viruses that have impacted the world.

Al Sattler expressed concerns about using refinery activity as an economic indicator and suggested that other types of businesses, including small businesses, be included in the monthly report.

Kyler Chin suggested that future monthly reports include information on the economic impacts to frontline and vulnerable communities.

PRESENTATION ONLY; NO ACTION REQUIRED

(Chairman Burke and Council Member Buscaino rejoined the meeting.)

PUBLIC HEARINGS

24. Determine That Proposed Rule 1150.3 – Emissions of Oxides of Nitrogen from Combustion Equipment at Landfills, Is Exempt from CEQA and Adopt Rule 1150.3

Board Member Kracov recused himself from Agenda Item No. 24 because of his position as General Counsel of the California Waste and Recycling Association, which is involved in this item.

Michael Morris, Planning and Rules Manager, gave the staff presentation on Item No. 24.

Council Member Mitchell noted that natural gas is sometimes added to landfill gas to extend the life of the capture process. She asked if the control devices that are in place are adequate to control the new mixture of gas.

Mr. Morris explained that adding natural gas will slightly impact the control devices used for those operations; however, the amount of siloxanes that are still in the system will make it difficult for traditional control equipment to continue to function. A provision was included in the rule that allows facilities to add natural gas and the limits are weighted accordingly but facilities will remain challenged with trying to address siloxanes.

The public hearing was opened, and the following individuals addressed the Board on Item 24.

David Rothbart, Los Angeles County Sanitation Districts, thanked staff for working with them in addressing the differences between biogas and natural gas. He congratulated Council Member Mitchell on her retirement and thanked her for her many years of public service.

Mr. Eder expressed concerns about biogas from landfills, sewage treatment plants and feedlots and urged support for the Solar New Deal.

Al Sattler expressed support for the rule noting the importance of collecting landfill gas and using combustion methods so that methane is not released into the atmosphere.

Kyler Chin expressed support for the rule noting the importance of placing limits on nitrogen oxide and carbon emissions and expressed concern about the burning of excess methane at landfills.

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

MOVED BY CACCIOTTI, SECONDED BY BENOIT, AGENDA ITEM NO. 24 APPROVED AS RECOMMENDED, ADOPTING RESOLUTION NO. 21-3 DETERMINING THAT PROPOSED RULE 1150.3 – EMISSIONS OF OXIDES OF NITROGEN FROM COMBUSTION EQUIPMENT AT LANDFILLS IS EXEMPT FROM THE REQUIREMENTS OF CEQA AND ADOPT RULE 1150.3 – EMISSIONS OF OXIDES OF NITROGEN FROM COMBUSTION EQUIPMENT AT LANDFILLS, BY THE FOLLOWING VOTE:

AYES:	Bartlett, Benoit, Burke, Buscaino, Cacciotti, Delgado, Kuehl, McCallon, Mitchell, Perez, Rodriguez, and Rutherford
NOES:	None
ABSTAIN:	Kracov
ABSENT:	None

25. Determine That Proposed Amendments to BACT Guidelines Are Exempt from CEQA and Amend BACT Guidelines

Staff waived the presentation on Item No. 25.

The public hearing was opened, and the following individual addressed the Board on Item 25.

Rita Loof, RadTech International, expressed support for the amendments and appreciation to staff and Board members for working with stakeholders.

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

MOVED BY MITCHELL, SECONDED BY CACCIOTTI, AGENDA ITEM NO. 25 APPROVED AS RECOMMENDED, TO DETERMINE THAT THE PROPOSED AMENDMENTS TO THE BACT GUIDELINES ARE EXEMPT FROM THE REQUIREMENTS OF CEQA AND APPROVE PROPOSED AMENEMENTS TO THE BACT GUIDELINES, BY THE FOLLOWING VOTE:

AYES: Bartlett, Benoit, Burke, Buscaino, Cacciotti, Delgado, Kracov, Kuehl, McCallon, Mitchell, Perez, Rodriguez, and Rutherford

NOES: None

ABSENT: None

OTHER BUSINESS

26. Approve One-Year Labor Agreement with Teamsters Local 911, Approve Comparable Terms for Non-Represented Employees, and Approve a Telework Stipend Proposal

Board Member Kracov recused himself from Agenda Item No. 26 because the International Brotherhood of Teamsters, Local 911 and 1932 are potential sources of income to him.

John Olvera, DEO/Administrative and Human Resources, gave the staff presentation on Item No. 26.

MOVED BY MITCHELL, SECONDED BY BENOIT, AGENDA ITEM NO. 26 APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

AYES: Bartlett, Benoit, Burke, Buscaino, Cacciotti, Delgado, Kuehl, McCallon, Mitchell, Perez, Rodriguez, and Rutherford

NOES: None

ABSTAIN: Kracov

ABSENT: None

CLOSED SESSION

There was no closed session.

ADJOURNMENT

There being no further business, the meeting was adjourned by Chairman Burke at 12:15 p.m.

The foregoing is a true statement of the proceedings held by the South Coast Air Quality Management District Board on February 5, 2021.

Respectfully Submitted,

Faye Thomas
Clerk of the Boards

Date Minutes Approved: _____

_____
Dr. William A. Burke, Chairman

ACRONYMS

AQMP = Air Quality Management Plan
BACT = Best Available Control Technology
CEQA = California Environmental Quality Act
FY = Fiscal Year
MSRC = Mobile Source (Air Pollution Reduction) Review Committee
RECLAIM = Regional Clean Air Incentives Market
RFP = Request for Proposals
U.S. EPA = United States Environmental Protection Agency
VOC = Volatile Organic Compound

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 2

PROPOSAL: Set Public Hearings April 2, 2021 to Consider Adoption of and/or Amendments to South Coast AQMD Rules and Regulations:

A. Determine That Proposed Amendments to Rule 1426 – Emissions from Metal Finishing Operations and Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, Are Exempt from CEQA, and Amend Rule 1426 and Rule 1469

Proposed Amended Rule 1426 would reduce fugitive emissions of hexavalent chromium, nickel, cadmium, and lead from metal finishing facilities by establishing requirements for building enclosures, housekeeping, and best management practices. Proposed Amended Rule 1469 will incorporate provisions under Proposed Amended Rule 1426 that affect Rule 1469 facilities to streamline implementation for these facilities. Additional amendments to Rule 1469 are proposed to remove reference to a chemical that is no longer used for testing HEPA filters and to update an incorrect table reference. This action is to adopt the Resolution: 1) Determining that the proposed amendments to Rule 1426 – Emissions from Metal Finishing Operations, and Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations are exempt from the requirements of the California Environmental Quality Act; and 2) Amending Rule 1426 – Emissions from Metal Finishing Operations and Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. (Reviewed: Stationary Source Committee, February 19, 2021)

B. Certify Final Environmental Assessment and Adopt Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program, and Proposed Rule 316 – Fees for Rule 2305, Submit Rule 2305 for Inclusion Into the SIP, and Approve Supporting Budget Actions

Proposed Rule 2305 will require warehouses greater than 100,000 square feet to directly reduce NOx and diesel PM, or to facilitate emission and exposure reductions of these pollutants. The Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program is a menu-based points system that will require warehouse operators to annually earn a specified number of points by completing actions from a menu. Menu items include acquiring or using: Near Zero Emissions (NZE) and/or Zero Emissions (ZE) on-road trucks, ZE cargo handling equipment, ZE charging/fueling infrastructure, solar panels, or particulate filters for nearby sensitive land uses. Alternatively, warehouse operators could prepare and implement a custom plan specific to their site, or they could pay a mitigation fee. Funds from the mitigation fee would be used through future solicitations and Board actions to incentivize the purchase of NZE or ZE trucks and ZE charging/fueling infrastructure in the communities near warehouses that paid the fee. Warehouse owners and operators would also have reporting and recordkeeping requirements. Proposed Rule 316 would establish fees for warehouse operators to fund South Coast AQMD compliance activities. This action is to: 1) Adopt the resolution: A) Certifying the Final Environmental Assessment for Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program and Proposed Rule 316 – Fees for Rule 2305; B) Adopting Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program and Proposed Rule 316 – Fees for Rule 2305; C) Submitting Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program for inclusion into the SIP; 2) Establish the Rule 2305 Mitigation Fee Alternate Compliance Fund; and 3) Authorize the Executive Officer to recognize upon receipt mitigation fees paid by warehouse operators into the Rule 2305 Mitigation Fee Alternate Compliance Fund. (Reviewed: Mobile Source Committee, February 19, 2021)

The complete text of the proposed rules/amendments, staff report and other supporting documents will be available from the South Coast AQMD's publication request line at (909) 396-2001, or from: Mr. Derrick Alatorre – Deputy Executive Officer/Public Advisor, South Coast AQMD, 21865 Copley Drive, Diamond Bar, CA 91765, (909) 396-2432, dalatorre@aqmd.gov and on the Internet (www.aqmd.gov) as of March 3, 2021.

RECOMMENDED ACTIONS:
Set Public Hearings April 2, 2021 to Amend Rules 1426 and 1469; and Adopt Proposed Rules 2305 and 316.

Wayne Nastri
Executive Officer

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Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 3

PROPOSAL: Adopt Resolution Recognizing Funds for FY 2020-21 Carl Moyer Program and Issue Program Announcements for Carl Moyer and SOON Programs

SYNOPSIS: These actions are to adopt a Resolution recognizing up to $35 million in Carl Moyer Program grant funds from CARB with its terms and conditions for FY 2020-21 and issue Program Announcements for "Year 23" of the Carl Moyer Program and SOON Provision to solicit applications for eligible zero and low emitting on- and off-road vehicles and equipment, including marine vessels and locomotives, and infrastructure for near-zero and zero emission vehicles and equipment.

COMMITTEE: Technology, February 19, 2021; Recommended for Approval

RECOMMENDED ACTIONS:

1. Adopt the attached Resolution recognizing upon receipt up to $35 million in FY 2020-21 Carl Moyer Program funds from CARB into the Carl Moyer Program SB 1107 Fund (32);
2. Issue Program Announcement #PA2021-05 to solicit projects for the FY 2020-21 "Year 23" Carl Moyer Memorial Air Quality Standards Attainment Program; and
3. Issue Program Announcement #PA2021-04 to solicit projects for the SOON Provision.

Wayne Nastri
Executive Officer

MMM:NB:VW:AY

Background

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) and the Surplus Off-Road Opt-in for NOx (SOON) Provision provide incentive funding for the incremental cost of purchasing cleaner-than-required engines

and equipment. The Carl Moyer Program also allows funding for infrastructure projects that enable the deployment of advanced, cleaner technologies, including zero and near-zero emission vehicles, which are needed to support the State's and South Coast AQMD's air quality goals. Both programs are primarily funded with Carl Moyer Program SB 1107 (including additional funds resulting from AB 1274) and AB 923 funds. In previous years, additional funding from the Community Air Protection Program (CAPP) and other grants were used to fund eligible projects submitted through the Carl Moyer Program. This is the 23rd year of the Carl Moyer Program and the 17th year of the SOON Provision. Program Announcements are needed to solicit applications for this year's Carl Moyer Program and SOON Provision.

Proposal

These actions are to adopt the attached Resolution recognizing upon receipt up to $35 million from CARB into the Carl Moyer Program SB 1107 Fund (32) for implementation of the FY 2020-21 "Year 23" Carl Moyer Program. CARB has tentatively allocated $34,043,871 to the South Coast AQMD for the Carl Moyer Program. Of this amount, $31,916,129 is designated for project funding and $2,127,742 for administrative and outreach efforts. In addition, $5,106,581 is required from the South Coast AQMD as the local match, which will be provided from AB 923 funds. Of this amount, $4,340,594 is designated for project funding and $765,987 for in-kind match contributions which may include program administration and outreach efforts.

This action is to also issue Program Announcements (PA) #PA2021-05 and #PA2021-04 for the Carl Moyer Program and SOON Provision, respectively. The approximate amounts of available funding for these programs include $31 million for the Carl Moyer Program and $5 million for the SOON Provision. In the last four funding cycles of the Carl Moyer Program, South Coast AQMD received additional funding beyond the Carl Moyer Program funds for eligible projects submitted through the Carl Moyer Program. These additional funds included CAPP Incentives, State Reserve, and Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program. At least 80 percent of these funds were used for projects that reduce emissions in disadvantaged and low-income communities. Staff anticipates receiving additional funds for this year's Carl Moyer Program, which may include funds in support of CAPP incentive projects, State Reserve and/or the FARMER Program. Staff will provide a detailed account of available and awarded funds for this year's Carl Moyer Program at the time of the awards recommendations.

The Carl Moyer PA will solicit applications from equipment owners for the retrofit, repower or replacement of older, in-use on-road vehicles, off-road equipment (including agricultural equipment), locomotives, marine vessels and other heavy-duty vehicles and equipment with cleaner technologies. The Carl Moyer PA will also solicit applications for infrastructure projects that support zero or near-zero emissions vehicles and equipment.

The SOON Provision is designed to achieve additional NOx emission reductions above those that would be obtained from CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation. The SOON Provision PA will solicit projects that involve the retrofit, repower or replacement of off-road vehicles with cleaner technologies. As in previous years, South Coast AQMD will only fund diesel-to-diesel applications when alternative fuel engines/vehicles are not commercially available or certified by CARB, except for emergency vehicles.

The Carl Moyer Program Guidelines approved by CARB on April 27, 2017, and any subsequent updates or changes, will be utilized for the evaluation of projects submitted under the "Year 23" Carl Moyer and SOON Provision PAs. Applicants will be able to submit their applications for both the Carl Moyer Program and SOON Provision online. Proposals for all categories will be due by 1:00 pm on Wednesday, June 2, 2021. Staff expects to finalize the review and evaluation of the proposals and recommend awards for Board consideration at the November 2021 Board meeting. The Carl Moyer Program and SOON Provision PAs are attached.

Funding Distribution

The Carl Moyer Program Guidelines include the requirement that at least 50 percent of the program funds be expended on projects that will reduce emissions in disproportionately impacted areas, which is tracked on a cumulative basis for all air districts. At least half of the funding allocated under SB 1107 and collected under AB 923 will be awarded to projects in disproportionately impacted areas. The Carl Moyer Guidelines also require that at least 50 percent of all funding available for the Carl Moyer Program and the SOON Provision, including roll-over funds from previous years and any returned funds from projects that fall through, be allocated to projects that will reduce emissions in disproportionately impacted areas.

Staff proposes a target of 60 percent of the available funds for projects that are domiciled in disadvantaged and low-income communities, while 40 percent of the funds may be used for projects that are very cost-effective, not exceeding a cost-effectiveness level of $20,000/ton of NOx, PM and ROG emissions reduced. South Coast AQMD reserves the right to amend these targets and allocate the funding among the different project categories or specific projects in accordance with South Coast AQMD air quality priorities.

Staff will utilize the latest version of CalEnviroScreen for identification of projects that will benefit disadvantaged and/or low-income communities.

Outreach
In accordance with South Coast AQMD's Procurement Policy and Procedure, a public notice advertising the PAs and inviting applicants 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 applicants may be notified utilizing South Coast AQMD'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 South Coast AQMD's website (http://www.aqmd.gov where it can be viewed by making menu selection "Grants & Bids." In light of COVID-19, South Coast AQMD will post pre-recorded presentations and host virtual meetings to provide program information and application assistance for applicants interested in participating in the Carl Moyer Program. Staff will also conduct additional outreach to potential applicants through community and other groups.

Program Guidelines
At its July 8, 2005 meeting, the Board approved long-term Program Guidelines for the implementation of the Carl Moyer Program in the South Coast Air Basin. The proposed funding distribution for different equipment categories in this Board letter is made according to the criteria outlined in that guideline with emphasis on the following priorities in order to achieve the highest emissions 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; and
- School Buses.

Benefits to South Coast AQMD
The South Coast AQMD has supported a number of activities directed to the advancement of new technologies that will support progress in meeting air quality goals for the region. 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 PAs will operate for many years, providing long-term emissions reductions.

Resource Impacts
CARB has tentatively allocated $34,043,871 to the South Coast AQMD for implementation of the FY 2020-21 "Year 23" Carl Moyer Program. Of this amount, $31,916,129 is designated for project funding and $2,127,742 for administrative and

outreach efforts. These funds will be recognized into the Carl Moyer Program SB 1107 Fund (32). In addition, $5,106,581, which will be provided from AB 923 funds, is required as the local match from the South Coast AQMD. Of this amount, $4,340,594 is designated for project funding and $765,987 for administrative and outreach efforts.

Attachments

1. Resolution
2. Carl Moyer Program Announcement #PA20201-05
3. SOON Provision Program Announcement #PA2021-04

RESOLUTION NO. 20-

A Resolution of the South Coast Air Quality Management District Board Recognizing Funds and Accepting the Terms and Conditions of the FY 2020-21 Carl Moyer Grant Award

WHEREAS, under Health & Safety Code §40400 et seq., the South Coast Air Quality Management District (South Coast AQMD) 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 South Coast AQMD is authorized by Health & Safety Code §§40402, 40440, and 40448.5 as well as the Carl Moyer Memorial Air Quality Standards Attainment Program (§44275, et seq.) to implement programs to reduce transportation emissions, including programs to encourage the use of alternative fuels and zero 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 Governing Board has adopted several programs to reduce emissions from on-road and off-road vehicles, as well as emissions from other equipment, including the Lower Emission School Bus Program and the Carl Moyer Program; and

WHEREAS, the South Coast AQMD 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 Governing Board, in regular session assembled on March 5, 2021, does hereby authorize the Executive Officer to accept the terms and conditions of the FY 2020-21 (Year 23) Carl Moyer Program grant award and recognizes up to $35 million from CARB to administer and implement the Year 23 Carl Moyer Program.

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

_____ _____

Date Faye Thomas, Clerk of the Board

Surplus Off-Road Opt-In for NOx (SOON)

SOUTH COAST AQMD PROGRAM ANNOUNCEMENT
PA2021-04

The South Coast Air Quality Management District (South Coast AQMD) 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 South Coast AQMD 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-Fueled Fleets Regulation. The primary purpose of this Program is to provide financial incentives to assist in the purchase of zero or lower-emissions heavy-duty engine technologies to achieve near-term nitrogen oxides (NOx) emissions 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 South Coast AQMD implements more stringent program criteria as described in the Rule 2449 SOON Implementation Guidelines.

COMPLIANCE WITH APPLICABLE LAWS

Applicants must comply with all federal, state, and local laws, ordinances, codes and regulations. If the application is eligible for funding, all vehicles and/or equipment to be purchased, leased or installed must be compliant with all applicable federal, state, and local air quality rules and regulations, and will maintain compliance for the full Contract term.

INTRODUCTION

The SOON Program is designed to achieve additional NOx reductions above those that would be obtained from the state off-road regulation. These reductions are critical to meeting the PM2.5 and ozone ambient air quality standards in the South Coast Air Basin (SCAB).

Funding for Program Announcement PA2021-04 is from the CMP. Project awards are contingent upon receiving the CMP funds from CARB. Additional sources of funding, such as AB 923, may be available and added to this Program.

Eligible projects qualified for the SOON Program must meet a maximum cost-effectiveness limit of $30,000 per ton of NOx emissions reduced and any additional South Coast AQMD criteria as stated in this PA. For advanced technology projects that are zero-emission, or alternatively meet the cleanest certified optional NOx standard applicable, South Coast AQMD may apply a cost-effectiveness limit of up to $100,000 per weighted ton of NOx emissions reduced, for the incremental emission reductions that go beyond current emission standards, as allowed by the CMP 2017 Guidelines. Projects exceeding the cost-effectiveness limit may receive partial

funding up to the cost-effectiveness limit or will be deemed ineligible. Except where otherwise stated, projects must meet the requirements of the CMP 2017 Guidelines.

Online applications submitted in response to this PA will be evaluated according to the approved 2017 CMP Guidelines. 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 any updates and/or advisories to the guidelines http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm.

South Coast AQMD staff will evaluate all qualified SOON Program online applications and make recommendations to the Governing Board for final selection of project(s) to be funded. All eligible projects will be ranked based on cost-effectiveness of NOx emissions reduced. Please note that depending upon the number of applications received in response to this PA, South Coast AQMD may prioritize the selection of projects to reduce emissions in and around Disadvantaged Communities (DAC) and low-income communities located in the SCAB. While South Coast AQMD encourages all eligible applications, this means that some projects may not be selected based on their domicile address, regardless of their cost-effectiveness ranking.

At least 50 percent of South Coast AQMD's CMP funds will be targeted for projects that meet the criteria of a disadvantaged or low-income community project. Other non-CMP funding sources may have DAC and/or low-income status requirements that may limit South Coast AQMD's ability to award such funding to projects that do not meet applicable geographic or income requirements. The Office of Environmental Health Hazard Assessment (OEHHA) in the California Environmental Protection Agency (CalEPA) has developed the California Communities Environmental Health Screening Tool: CalEnviroScreen Version 3.0 (CalEnviroScreen 3.0). The CalEnviroScreen 3.0 tool will be used by South Coast AQMD to identify projects that qualify as a DAC, which is defined as scoring in the top 25th percentile, and will strive to maximize the benefits to these communities from this PA. All applications will be assessed with the CalEnviroScreen tool to identify and verify if the project will benefit a DAC. This tool is available at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

South Coast AQMD SOON Program requirements may be more stringent than CARB's requirements and/or guidelines. For example, South Coast AQMD may have a lower cost-effectiveness ceiling for a particular project type. In case there is any conflict between CARB and South Coast AQMD criteria, the more stringent criteria will prevail. South Coast AQMD will post any new information and requirements on its SOON Web page at www.aqmd.gov/soon. It is the responsibility of the applicant to ensure that the most current information and requirements are reflected in a submitted application. Be aware that there is a possibility that due to program priorities, cost-effectiveness or funding category limitations (i.e., caps), project applications may be offered only partial funding, and not all applications that meet the cost-effectiveness criteria may be funded.

DEFINITIONS

1. Alternative Fuel
   Alternative fuels include compressed natural gas (CNG), liquefied natural gas (LNG), methanol, ethanol, propane (LPG) and electric technologies. Base Rule

2. Base Rule
   Base rule is defined as the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation without the SOON provisions (Title 13, Division 3, Chapter 9, Article 4.8, Section 2449 and 2449.1). Compliance with the Base Rule is required and is demonstrated by the Diesel Off-Road Online Reporting System (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 South Coast AQMD SOON webpage.

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 determines the maximum funding that can be provided to an individual equipment repower, replacement or retrofit project for each ton of emissions reduced. Under the SOON Program the cost-effective is calculated based on tons of NOx reduced per year.

6. Current NOx Standard
   For all engine horsepower categories, the current NOx standard in 2021 is Tier 4 Final.

7. Dual-Fuel Technology
   Dual-fuel technology includes electric hybrid 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.
   i. Repower projects are eligible to receive up to 85%;
   ii. Replacement projects are eligible to receive up to 80%;
   iii. NOx retrofit projects are eligible to receive up to 100%.

9. Project Life
   Project life is the period of the contract term during which the repowered, replacement or retrofitted vehicle is operated. The contractor must report the annual usage throughout the project life. In addition, project life is used to calculate the cost-effectiveness and funding amount for a project.

10. Replacement Project
    Replacement project is the purchase of a new or used equipment to replace an existing unit. Only new equipment with engines certified to Tier 4 Final, or cleaner, emissions standards are eligible for funding.

11. Repower Project
    Repower project is the replacement of an old engine of an existing equipment 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 heavy-duty off-road 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 zero or low-emissions engine or retrofit technologies under this Program must be real, surplus and quantifiable. Senate Bill 513 (Beall) removed many of the limitations associated with co-funding from other sources. The air district must verify the sum of all other incentive funds to ensure the Moyer funds will not exceed the total project cost. Applicants from non-public entities must provide at least 15 percent of the Moyer eligible project costs from non-public sources.

Replacement and repower projects are **limited to only** those involving a diesel baseline engine subject to the off-road regulation, and a lower emission or zero emission technology that is certified, verified or approved by CARB. **All projects must meet the program's cost-effectiveness limit(s) and be operational no later than May 5, 2023.** 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 South Coast AQMD Governing Board.

All proposals will be evaluated based on criteria set forth in this PA. The South Coast AQMD will evaluate and/or verify information submitted by the applicant. At South Coast AQMD's discretion, consultants contracted by South Coast AQMD 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 South Coast AQMD 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 of five year for replacement and seven-year for repower operational requirement within the jurisdiction of the South Coast AQMD. A shorter project life will be considered on a case-by-case basis and may be required by the CMP Guidelines for specific types of equipment. However, a shorter project life may affect the project's ranking relative to other projects 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-by-case basis.
- Applicants must demonstrate that during the contract period, vehicles equipped with NOx retrofits, repowered with new engines, or that have been replaced using SOON program funding, will not use a lower emission rate to calculate the fleet average index and target rate and BACT credit to meet compliance in the DOORS. Actions taken using SOON program funding may be used for determining compliance **after** the completion of the SOON program project contract period for that vehicle. For example, if a Tier 2 vehicle is repowered with a Tier 4 engine with SOON Program funds for purposes of compliance with the off-road regulation, that vehicle is still treated as if it were a Tier 2 until the end of the contract period for the SOON program project.
- Applicants **must** provide vendor quotes with their online 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.**
- For off-road replacement and repower projects, the CMP guidelines specify that the horsepower rating of the new (or replacement) engine must not be greater than 125 percent of the original manufacturer rated horsepower of the old (or existing) engine. If the new engine is greater than 125 percent, then the eligible funding amount will be based on the cost of an engine or equipment with a horsepower rating that is no higher than 125 percent of the existing engine horsepower rating. The applicant must pay the additional costs associated with the higher horsepower engine and obtain a price quote for an engine or equipment that is within the 125 percent range for the funding determination. In addition, verifiable records on the existing engine must be provided with the online application to accurately identify the engine manufacture year and horsepower (e.g., photographs of engine labels, statement from engine manufacturers, etc.).

- Applicants must demonstrate that they are in full compliance with all applicable CARB 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 Diesel-Fueled Fleets Regulation throughout the contract term, as well as how the new projects under this PA will meet SOON NOx targets in 2023.**
- 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. The South Coast AQMD contract must be signed by the equipment owner.
- Pre- and post-inspection of all vehicles/engines/equipment approved for funding will be conducted by South Coast AQMD.
- Destruction of the engine/equipment being repowered or replaced is required.
- To avoid double dipping, applicants shall not apply for funding for the same equipment in any other air district.
- Project equipment must be domiciled and operate a minimum of 75% of the time within the boundaries of the SCAB.

POTENTIAL PROJECTS

All eligible projects must use CARB-certified technology or technology that has been verified/approved 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) and must provide a 15% NOx Reduction benefit. 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 provide a 15% NOx reduction benefit and 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 cost-effectiveness 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 six months of the application submittal, vehicle/equipment with an Interim Tier 4 or Tier 3 engine may be purchased.

PROJECT CRITERIA

The South Coast AQMD 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-Fueled Fleets Regulation at http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm.
- SOON Program grants can be no greater than a project's incremental cost . 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**.
- New engines manufactured under the "Flexibility Provisions for Equipment Manufacturers", as detailed in Title 13, CCR, section 2423(d), are ineligible for SOON Program funding to repower equipment.
- For replacement projects, existing equipment with engines manufactured under the flexibility provision, detailed in CCR, title 13, section 2423 (d), the baseline emission rates shall be determined by using the previous applicable Tier emission standard for the existing engine model year and horsepower rating.

- Class 7 diesel forklifts are the only diesel forklifts eligible for SOON Program funding and are subject to all off-road project criteria. The South Coast AQMD 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 South Coast AQMD 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 max. for excavators, skid steer loaders, and rough terrain forklifts)
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 cost-effectiveness calculation methodology found in Appendix C of the CMP Guidelines (see Hhttp://www.arb.ca.gov/msprog/moyer/guidelines/current.htm). Under the SOON Program, only NOx emission reductions will be taken into consideration to calculate the cost-effectiveness.

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 implementation period. All equipment must operate in the South Coast AQMD for the full project life. The South Coast AQMD 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
- DOORS snapshot demonstrating compliance with the Off-Road Regulation

Records must be retained and updated throughout the project life and made available for South Coast AQMD inspection. The South Coast AQMD 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.

Equipment owner, if awarded CMP grant funds, will be required to submit annual reports for the life of the project, as described in Section II – Work Statement/Schedule of Deliverables.

PROGRAM ADMINISTRATION
The SOON Program will be administered locally by the South Coast AQMD through the Science and Technology Advancement Office.

FUNDING CATEGORIES
Only equipment identified in the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation is eligible for this Program.

PROJECT EVALUATION/AWARDS
South Coast AQMD staff will evaluate all submitted proposals and make recommendations to the South Coast AQMD Governing Board for final selection of project(s) to be funded. Proposals

will be evaluated for cost-effectiveness of NOx emissions reduced on an equipment-by-equipment basis, as well as a project's disproportional impact evaluation. (This is discussed further in Section IV).

SCHEDULE OF EVENTS

Release of 21-04	March 5, 2021
Workshops	Information on virtual pre-recorded presentations and other webinars (as needed and upon request) to be posted on www.aqmd.gov/moyer in April 2021
All Applications Due	No later than 1:00 PM, Tuesday, June 1, 2021
Anticipated Award Consideration by South Coast AQMD Board	October-November 2021

ALL PROPOSALS MUST BE RECEIVED VIA SOUTH COAST AQMD'S ONLINE APPLICATION PROGRAM (OAP)
NO LATER THAN 1:00 P.M. ON TUESDAY, JUNE 1, 2021

Electronic submission using South Coast AQMD's new CMP Online Application Program (OAP) is available at www.aqmd.gov/moyer. Paper applications will no longer be accepted.

South Coast AQMD 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 South Coast AQMD 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 online application 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 5, 2023.**

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 South Coast AQMD.

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

- Emission reductions must be real, quantifiable, enforceable and surplus in accordance with CARB and South Coast AQMD guidelines.
- Cost-effectiveness of the project must meet the minimum requirement of the CMP 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 5, 2023.
- Appropriate annual usage records must be kept and reported to South Coast AQMD 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 South Coast AQMD expects to receive the following:

- 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.
- An annual submission of the applicant's DOORS Fleet Compliance Snapshot demonstrating compliance with the off-road regulation.

South Coast AQMD reserves the right to verify the information provided.

SECTION III: PROPOSAL SUBMITTAL REQUIREMENTS

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 South Coast AQMD. Although the proposer will not be

automatically disqualified by reason of work performed for such firms, the South Coast AQMD 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 South Coast AQMD District 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 South Coast AQMD Governing Board. Any orders placed or payments made in advance of an executed contract with the South Coast AQMD are done at the risk of the applicant. The South Coast AQMD 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 zero or lower-emissions technology. The proposed zero or lower-emissions technology must be CARB-certified 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 $30,000/ton of NOx emissions reduced and $100,000/ton of NOx emissions reduced for advanced technology that includes zero-emission or alternatively, meets the cleanest optional NOx standard certified. The cost-effectiveness level used for the selection of projects may be lower 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 co-funding and the amount of each co-funding source in the application. **Applicants should be aware that the project life used in calculating the NOx emissions reductions will be used to determine the length of their annual reporting obligation and the length of their contract. For example, if a seven-year project life is used for the NOx emissions reduction calculation, then the applicant will be required to operate and track activity for the funded-vehicle/equipment for the full seven years.**

[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.

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

Grounds for Rejection:
An application may be immediately rejected if:

- Does not include correct documentation and other forms required.
- All applications are not signed by an individual authorized to represent the firm

Certifications and Representations
Contained in this PA are six business forms which must also be completed and submitted with the application.

Compliance Plan
Projects funded by SOON monies must result in NOx emissions 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 for the anticipated contract period:

- 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 calculator (individual 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 South Coast AQMD SOON website: www.aqmd.gov/soon. CARB's Fleet Average Calculators can be downloaded at the CARB website: https://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm.

Methods of Delivery:
The proposer must submit the application using the South Coast AQMD online system, available at www.aqmd.gov/moyer. This online system allows applicants to submit their application electronically to the South Coast AQMD prior to the date and time specified below. South Coast AQMD "Business Information Forms" requiring signatures must be scanned and uploaded to the online system in pdf format. First-time users must register as a new user. A tutorial of the system will be provided at the pre-application workshops and you may contact Alyssa Yan at ayan@aqmd.gov (909) 396-2024 if you would like additional assistance.

Due Date

ALL APPLICATIONS MUST BE RECEIVED VIA SOUTH COAST AQMD'S CMP ONLINE APPLICATION PROGRAM (OAP) NO LATER THAN 1:00 P.M. ON TUESDAY, JUNE 1, 2021

Access to South Coast AQMD's CMP Online Application Program (OAP) is provided at: www.aqmd.gov/moyer.

Disposition of Proposals

The South Coast AQMD reserves the right to reject any or all proposals. All responses become the property of the South Coast AQMD. One copy of the proposal shall be retained for South Coast AQMD 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 South Coast AQMD.

SECTION IV: PROPOSAL EVALUATION/CONTRACTOR SELECTION CRITERIA

South Coast AQMD staff will evaluate all submitted proposals and make recommendations to the South Coast AQMD Governing Board for final selection of project(s) to be funded. Proposals will be evaluated based on the 2017 CMP Guidelines, including verification that the project meets the NOx cost-effectiveness limit(s) for this program. The cost-effectiveness determination will be done on a equipment-by-equipment basis.

The evaluation will determine the ranking for each project based on the cost-effectiveness of NOx emissions reduced. Please note that depending upon the number of online applications received in response to this PA, South Coast AQMD may prioritize the selection of projects to reduce emissions in and around DAC and low-income communities located within the SCAB. While South Coast AQMD encourages all eligible applications, this means that some projects may not be selected based on their domicile address, regardless of their cost-effectiveness ranking.

At least 50 percent of the CMP funds must be used for projects that are located and operated within a disadvantaged and/or low-income community. South Coast AQMD uses the following method to meet these requirements.

1. All projects must meet the criteria in the 2017 CMP Guidelines and the cost-effectiveness limit of $30,000 per ton of NOx emissions reduced and $100,000/ton of NOx emissions reduced for advanced technology that is zero-emission or alternatively, meet the cleanest optional NOx standard certified.
2. Each project's domiciled address will be used to determine if the project is located within a disadvantaged or low-income community. The CalEnviroScreen 3.0 tool will be used by South Coast AQMD to determine if a project is located within a DAC and/or low-

income community. This tool is available at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

3. Projects that are not domiciled within a DAC and/or low-income community may still be considered if the application documentation shows that the vehicle/equipment was operated a majority of time in a DAC and/or low-income community.

All other projects will be ranked according to NOx cost-effectiveness, with the most cost-effective projects considered first and then in descending order for each funding category until the remainder of the funds are exhausted.

Be aware that there is a possibility that due to program priorities, cost-effectiveness or funding category limitations (i.e., caps), project applicants may be offered only partial funding, and not all applications that meet the cost-effectiveness criteria may be funded.

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, and the compliance plan worksheet can be found at the at AQMD SOON website (http://www.aqmd.gov/SOON), or can be addressed to:

Alyssa Yan
Science and Technology Advancement
South Coast AQMD
21865 Copley Drive
Diamond Bar, CA 91765
Phone: (909) 396-2024
ayan@aqmd.gov

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South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Business Information Request

Dear South Coast AQMD Contractor/Supplier:

South Coast Air Quality Management District (South Coast AQMD) 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 not be able to establish you as a vendor. This will delay any payments and would still 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,

Sujata Jain
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

South Coast
Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

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 South Coast AQMD,_____(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 **for contracts or purchase orders funded in whole 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.

Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with South Coast AQMD 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. _____.
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 South Coast AQMD at the time of bid application.
- performs 90 percent of the work within South Coast AQMD'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 South Coast AQMD 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. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

___ - ___ - ____

or

Employer identification number

__ - _____

Part II Certification

Under penalties of perjury, 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 for Part II, later.

Sign Here | **Signature of U.S. person** ▶ | **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

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, *later.*

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

4. 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*, later, for further information.

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 Pub. 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.

3. 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 24% 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,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. 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

5. 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*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

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*, later, 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 (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a 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 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 on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on 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

[1] See 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. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

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.

If you are a single-member LLC that is disregarded as an entity separate from its owner, 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 *What Name and Number To Give the Requester,* later, 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 ITIN, 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. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

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 item 1, 4, or 5 below indicates 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), ABLE accounts (under section 529A), 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	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. 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:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. 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
15. 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

[1] 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.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You 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*, earlier.

*__Note:__ The 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 Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic 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 report them at *www.ftc.gov/complaint*. You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* 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.

TAXABLE YEAR

CALIFORNIA FORM

2021 Withholding Exemption Certificate 590

The payee completes this form and submits it to the withholding agent. The withholding agent keeps this form with their records.

Withholding Agent Information

Name

Payee Information

Name

☐ SSN or ITIN ☐ FEIN ☐ CA 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 code

Exemption Reason

Check only one box.

By checking the appropriate box below, the payee certifies the reason for the exemption from the California income tax withholding requirements 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 nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.

☐ **Corporations:**
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to have a permanent place of business in California or ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.

☐ **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 registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.

☐ **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 Pension/Profit-Sharing Plans:**
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.

☐ **California Trusts:**
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly 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 the time of death. The estate will file a California fiduciary tax return.

☐ **Nonmilitary Spouse of a Military Servicemember:**
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

CERTIFICATE OF PAYEE: Payee must complete and sign below.

To learn about your privacy rights, how we may use your information, and the consequences for not providing the requested information, go to **ftb.ca.gov/forms** and search for **1131**. To request this notice by mail, call 800.852.5711.

Under penalties of perjury, I declare that I have examined the information on this form, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. I further declare under penalties of perjury that if the facts upon which this form are based change, I will promptly notify the withholding agent.

Type or print payee's name and title _____ Telephone _____

Payee's signature ▶ _____ Date _____

2020 Instructions for Form 590

Withholding Exemption Certificate

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

General Information

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. For more information, See General Information B, Income Subject to Withholding.

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a California 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 more information, 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, Real Estate Withholding Statement, to claim an exemption from the real estate withholding requirement.

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

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 (completed and signed) 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 exemption certificate, the withholding agent may accept a letter from the payee as a substitute explaining why they are 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 (TIN).

The certification does not need to be renewed annually. The certification on Form 590 remains valid until the payee's status changes. The withholding agent must retain a copy of the certification or substitute for at least five years after the last payment to which the certification applies. The agent must provide it to the FTB upon request.

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 nonwage 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 see General Information E, Military Spouse Residency Relief Act (MSRRA), and 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 it has qualified through the CA SOS to transact intrastate business. 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 TIN and check the appropriate TIN box.

You must provide a valid 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 – Follow the country's practice for entering the city, county, province, state, country, and postal code, as applicable, in the appropriate boxes. **Do not** abbreviate the country name.

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

Withholding Agent Instructions

Do not send this form to the FTB. The certification on Form 590 remains valid until the payee's status changes. The withholding agent must retain a copy of the certificate or substitute for at least five years after the last payment to which the certificate applies. The agent must provide it to the FTB upon request.

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, Form 592-PTE, Pass-Through Entity Annual Withholding Return, Form 592-Q Payment Voucher for Pass-Through Entity Withholding, and Form 592-V, Payment Voucher for Resident or Nonresident Withholding.

Additional Information

Website:	For more information, go to **ftb.ca.gov** and search for **nonwage**. **MyFTB** offers secure online tax account information and services. For more information, go to **ftb.ca.gov** and login or register for MyFTB.
Telephone:	888.792.4900 or 916.845.4900, Withholding Services and Compliance phone service
Fax:	916.845.9512
Mail:	WITHHOLDING SERVICES AND COMPLIANCE MS F182 FRANCHISE TAX BOARD PO BOX 942857 SACRAMENTO CA 94257-0651

For questions unrelated to withholding, or to download, view, and print California tax forms and publications, or to access the TTY/TDD numbers, see the Internet and Telephone Assistance section.

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 disability 711 or 800.735.2929 California relay service

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
TTY/TDD:	800.822.6268 para personas con discapacidades auditivas o de habla 711 ó 800.735.2929 servicio de relevo de California

Certification Regarding
Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property:

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

_____

Typed Name & Title of Authorized Representative

_____

Signature of Authorized Representative Date

❑ I am unable to certify to the above statements. My explanation is attached.

_____

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 (South Coast AQMD) 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 South Coast AQMD 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 South Coast AQMD; 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, South Coast AQMD 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 South Coast AQMD Governing Board Members can be found at South Coast AQMD website (www.aqmd.gov). The list of current MSRC members/alternates can be found at the MSRC website (http://www.cleantransportationfunding.org).

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) Parent subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.

(2) Otherwise related business entity. Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one 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 • www.aqmd.gov

Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

- ☐ Individual (Employee, Governing Board Member)
- ☐ Vendor/Contractor
- ☐ 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 Number

City	State	Zip	Country

Taxpayer ID Number	Telephone Number	Email Address

Authorization

1. I authorize South Coast Air Quality Management District (South Coast AQMD) 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 South Coast AQMD 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 South Coast AQMD for distribution. This will delay my payment.
2. This authorization remains in effect until South Coast AQMD receives written notification of changes or cancellation from you.
3. I hereby release and hold harmless South Coast AQMD 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.

To be Completed by your Bank

Staple Voided Check Here

Name of Bank/Institution		
Account Holder Name(s)		
☐ Saving ☐ Checking	Account Number	Routing Number
Bank Representative Printed Name	Bank Representative Signature	Date
ACCOUNT HOLDER SIGNATURE:		Date

For South Coast AQMD Use Only

Input By _____ Date _____

2021
CARL MOYER MEMORIAL
AIR QUALITY STANDARDS ATTAINMENT PROGRAM
PROGRAM ANNOUNCEMENT
"Year 23"

SOUTH COAST AQMD PROGRAM ANNOUNCEMENT
PA2021-05

The South Coast Air Quality Management District (South Coast AQMD) is pleased to announce the availability of funds for the Carl Moyer Memorial Air Quality Standards Attainment Program (hereafter "CMP"). The CMP has played a significant role in incentivizing equipment owners to purchase cleaner-than-required engines, vehicles and equipment. This year marks South Coast AQMD's 23rd year of CMP implementation.

The CMP is intended to obtain "surplus" emission reductions of Nitrogen Oxides (NOx), Particulate Matter (PM10) and Reactive Organic Gases (ROG) from heavy-duty vehicles and other equipment operating in California as early and as cost-effectively as possible. The CMP provides financial incentives to equipment owners to repower, retrofit or replace in-use heavy-duty vehicles and equipment with cleaner-than-required engine and equipment technologies that will achieve emission reductions that are real, surplus, quantifiable and enforceable.

COMPLIANCE WITH APPLICABLE LAWS

Applicants must comply with all federal, state, and local laws, ordinances, codes and regulations. If the application is eligible for funding, all vehicles and/or equipment to be purchased, leased or installed must be compliant with all applicable federal, state, and local air quality rules and regulations, and will maintain compliance for the full Contract term.

COMPLIANCE WITH LABOR LAWS

If an application is deemed eligible, the applicant will be required to provide any labor violations that have occurred within the last three years to be further considered for an award. If awarded, the contractor will be required to notify South Coast AQMD in writing if they have been found by a court or federal or state agency to have violated labor laws. The contractor will complete a yearly certification in which they will either state that they have not been found by a court or federal or state agency to have violated labor laws or, if such violations have been found, the contractor will give South Coast AQMD details about those violations in the certification. If the contractor has previously provided that information to the South Coast AQMD, they will be required to reattach that previous notification to the certification and provide any additional details about those violations that have not previously been provided. The contractor's yearly certification will be due at the same time as the annual progress reports. South Coast AQMD reserves the right to terminate the contract with a contractor that has been found to have violated labor laws, and the contractor may be required to return any and all contract funds, as determined by South Coast AQMD. The contractor will also ensure that these requirements are included in all subcontracts.

SECTION I – OVERVIEW

PURPOSE

The purpose of this Program Announcement (PA) is to solicit project applications for the 2021 Carl Moyer Memorial Air Quality Standards Attainment Program (CMP). **The budget for this PA will be approximately $31 million from the CMP and AB 923 Funds. The South Coast AQMD expects to receive additional funds for this year's CMP, which may include funds in support of AB 617-Community Air Protection Program and the Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program.**

All applications will be evaluated based on the criteria set forth in this PA, the CMP Guidelines, and any subsequent updates and modifications/advisories to the Guidelines. This PA was prepared based on the latest version of the CMP Guidelines approved by the California Air Resources Board (CARB) on April 27, 2017, which are available online at: http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm.

This PA will identify the equipment categories, project options and eligibility criteria to qualify for grant funding under this year's CMP. Any tax obligation associated with an award is the responsibility of the grantee.

The detailed requirements for projects can be found in the CMP Guidelines. Applicants are encouraged to review the CMP Guidelines to confirm eligibility and understand the funding "caps" that may apply to certain types of projects. In light of COVID-19, the South Coast AQMD will not conduct in-person workshops for this year's CMP. Instead, South Coast AQMD will post pre-recorded presentations and host virtual meetings to provide program information and application assistance for applicants interested in participating in the CMP.

In the preparation of this PA, the words "Applicant" and "Contractor" are used interchangeably. South Coast AQMD staff will evaluate all qualified applications and make recommendations to the Governing Board for final selection of project(s) to be funded. All eligible projects will be ranked based on the cost effectiveness of NOx, PM10 and ROG emissions reduced. Please note that depending upon the number of applications received in response to this PA, South Coast AQMD may prioritize the selection of projects to reduce emissions in and around Disadvantaged Communities (DAC) and low-income communities located within the South Coast Air Basin (SCAB). While South Coast AQMD encourages all eligible applications, this means that some projects may not be selected based on their domicile address, regardless of their cost-effectiveness ranking.

At least 50 percent of South Coast AQMD's CMP funds will be targeted for projects that meet the criteria of a disadvantaged or low-income community projects. Other non-CMP funding sources may have DAC and/or low-income status requirements that may limit South Coast AQMD's ability to award such funding to projects that do not meet applicable geographic or income requirements. The Office of Environmental Health Hazard Assessment (OEHHA) in the California Environmental Protection Agency (CalEPA) has developed the California Communities Environmental Health Screening Tool: CalEnviroScreen Version 3.0

(CalEnviroScreen 3.0). The CalEnviroScreen 3.0 tool will be used by South Coast AQMD to identify projects that qualify as a DAC, which is defined as scoring in the top 25th percentile, and will strive to maximize the benefits to these communities from this PA. All applications will be assessed with the CalEnviroScreen tool to identify and verify if the project will benefit a DAC. This tool is available at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

Be aware that there is a possibility that due to program priorities, cost effectiveness or funding category limitations (i.e., caps), project applicants may be offered only partial funding, and not all applications that meet the cost-effectiveness criteria may be funded.

FUNDING CATEGORIES

Project equipment must be domiciled within the SCAB and operate a minimum of 75% of the time within the boundaries of the SCAB, except for locomotives, which are required to operate at least 51% of the time in the SCAB. Below are the specific project categories identified for funding under this PA:

- On-Road Heavy-Duty Vehicles, including transit fleet vehicles, drayage trucks, solid waste vehicles, public agency/utility vehicles and emergency vehicles (fire apparatus)
- Off-Road Equipment, including:
  - Marine Engine Repower
  - Shore Power (if project is not subject to CARB's At-Berth Regulation)
  - Construction Equipment
  - Agricultural Mobile Equipment (loaders, tractors, water pulls, etc.)
  - Locomotives
  - Cargo Handling Equipment
- Infrastructure to fuel or power a zero or near zero emission, heavy-duty vehicle or equipment, including but not limited to: on-road heavy-duty vehicles, cargo handling equipment, and marine vessels (shore power).

On-Road Heavy-Duty Vehicles

Below are the key requirements for on-road, heavy-duty vehicle projects:

- Fleets must be fully compliant with all applicable fleet regulations.
- Eligible project types include vehicle replacement and repower/conversion projects; on-road retrofit projects will be considered on a case-by-case basis.
- For on-road vehicles, a project's new engines may not be diesel-fueled (with the exception of Emergency Apparatus).
- Eligible engine model years include 2010 and older, however the eligibility of engine model year 2007 through 2009 diesel engines subject to the Truck and Bus Regulation are pending CARB approval.
- Eligible vehicle types include heavy-duty trucks and buses, transit buses, solid waste collection vehicles, public agency and utility fleet vehicles and emergency vehicles (however, emergency vehicles are only eligible under the replacement project type).
- In addition to the cost-effectiveness limit(s) prescribed by the CMP Guidelines, each vehicle/engine is also subject to a funding cap[1] based on various factors including weight class (i.e., gross vehicle weight rating (GVWR)), vehicle type, and the proposed

[1] Funding caps are provided in Tables 4-2 through 4-7 in the CMP Guidelines.

technology. The maximum grant award will be based on the allowable cost effectiveness and the applicable funding cap(s), whichever is less.
- Projects must include commercially available technologies that are certified or verified by CARB.

Off-Road Heavy-Duty Equipment/Engines

Below are the key requirements for the off-road equipment category:

- Fleets must be fully compliant with all applicable regulations.
- Eligible project types include equipment replacement, engine repower and retrofit devices.
- Eligible equipment types include, but are not limited to, construction equipment, marine engines, shore power, locomotives, agricultural tractors, zero-emission rubber-tired gantry (RTG) cranes and other cargo handling equipment.
- Large and medium fleets may apply for Carl Moyer Program funding after January 1, 2017, for zero-emission projects only.

Infrastructure

Infrastructure projects that enable the deployment of alternative, advanced, and cleaner technologies to support the State's air quality goals are also eligible for CMP funding. Depending upon the number of applications received, the South Coast AQMD may have to limit the available CMP funding that will be allocated to infrastructure projects. Specifically, projects in this category involve the installation of fueling or energy infrastructure that will be used to fuel or power zero or near-zero emission, heavy-duty vehicles or equipment. Infrastructure designed to exclusively fuel or charge light-duty vehicles is not eligible for CMP funding.

Infrastructure projects will be selected on a competitive basis taking into consideration the project location, total requested funding, the percentage of renewable source, public accessibility, expected usage for the life of the project, fleet commitments to utilize the infrastructure, equipment throughput relative to cost, project implementation timeliness, cost-share, and other factors. Each scoring criterion will be weighted as shown in the table below. The priority for project selection may change based on technology development/commercialization and requirements of any additional funds that may become available. Infrastructure projects are not subject to a cost-effectiveness limit.

Infrastructure Project Scoring Criteria

Criteria #	Criteria	Percentage
1	Project Location (if in an AB617 community)	8%
2	Renewable Sources	8%
3	Expected Throughput Usage per District Cost	20%
4	Project Co-Funding	10%
5	Infrastructure Usage and Equipment Availability	30%
6	Project Readiness and Implementation	21%
7	Application Completeness at Submittal	3%
	Total	100%

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. The vendor quotes must be dated within 90 days of the application submittal date. Applicants need to inform vendors of the time frame of the award process so that they can estimate prices based on the future/projected order/purchase date.
Eligible costs include planning and engineering, permitting, equipment necessary for the functional operation of the infrastructure, and installation. Operational costs are not eligible and should not be included in the bid.

Applicants shall include a description of the installation vendor selection process. Applicants must demonstrate that they either own the land on which the project will be located, or control it through a long-term lease, easement or other legal arrangement, for the duration of the project life. Infrastructure projects may also require a case by case review by CARB.

Eligible infrastructure projects include, but are not limited to:

- Battery charging stations: New, conversion of existing, and expansion to existing battery charging stations for heavy-duty vehicles and equipment (not for light-duty vehicles)
- Alternative Fueling Station: New, conversion of existing, or expansion of existing hydrogen or natural gas fueling station for heavy duty vehicles and equipment
- Stationary Agricultural Station: Pump electrification
- Shore Power: Shore-side electrification for projects not subject to CARB's shore power regulation. Only a port authority, terminal operator, or marine vessel owner is eligible for this type of infrastructure project.

A vehicle or equipment project is not required to be submitted as a condition of eligibility for infrastructure funding, however, priority will be given to such projects. The applicant must provide proof (i.e., letter of commitment from the fleet operator, purchase orders, etc.) that a sufficient number of supported vehicles/equipment be acquired and/or committed to utilize the infrastructure when the project is complete. For infrastructure expansion projects, documentation of increased throughput at the station is required to ensure the expansion is commensurate with projected fueling demand.

Purchase orders or other purchase commitments to design and install the proposed infrastructure shall not be placed until after the date of award approval by the South Coast AQMD Governing Board. Further, any purchase commitments placed after South Coast AQMD Governing Board approval but in advance of a fully executed contract are placed at the applicant's own risk.

Regulatory Compliance
All applicants must be fully compliant with all applicable regulations in order to be eligible for consideration for CMP funding. Refer to CARB's fleet rule Web pages that provide detailed information on compliance with these regulations. These web links are listed below in Section VI.

GENERAL PROGRAM INFORMATION
The CMP award amount shall not exceed the project's incremental cost, applicable funding caps and/or cost-effectiveness limit(s). The "Step 1" cost-effectiveness limit, $30,000 per weighted ton of emissions reduced, applies to projects that bring vehicles and equipment up to current standards. The "Step 2" cost-effectiveness limit, $100,000 per weighted ton of emissions reduced, applies to projects that are zero-emission or meet the cleanest certified optional standard applicable (by source category).

All projects must meet the criteria stated in this PA and the CMP Guidelines in effect at the time of contract execution. A project's cost effectiveness is determined based on the annualized cost of the project and the amount of NOx, ROG and PM10 emission reductions that will be achieved by the project. Project cost effectiveness is currently calculated according to the following formula:

$$\frac{\text{Annualized Cost (\$/year)}}{\text{[NOx reduction + 20 (combustion PM10 reduction) + ROG reduction] (tons/year)}}$$

For projects that involve advanced technologies, the cost effectiveness will be calculated using the CMP's two-step calculation approach.[2]

All projects are expected to be operational within eighteen (18) months of contract execution or by May 5, 2023, whichever is earlier. Some projects may have earlier in-service operational date requirements, if they are subject to CARB regulations.

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

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

[2] Detailed guidance for the new two-step calculation approach, as well as all CMP emissions reduction and cost effectiveness calculations is available at: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_c.pdf.

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

All emission reductions resulting from funded projects will be credited to the Carl Moyer Program. A grant shall not be made that provides the applicant with funds in excess of the maximum eligible amount, in accordance with CMP guidelines.

A project may be leveraged with other funding sources. The applicant must disclose all funding sources at the time of application and will be required to report all funding sources prior to invoice payment. Other funding sources may include but are not limited to state and federal funding programs that 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. The sum of all grants and other funds applied toward the project shall (1) not exceed the total project cost for public agency applicants and (2) not exceed 85% of the total project cost for non-public agency applicants. In other words, the grantee[3] must pay at least 15 percent of the project cost from non-public sources.

The emission reductions paid for by the CMP shall not be claimed by the other funding sources.

ELIGIBILITY INFORMATION

Emission reductions obtained through CMP projects must be real, surplus, quantifiable and enforceable. The emission reductions 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.

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. For repower and replacement projects, the replacement engine must result in a minimum of 15 percent NOx reduction.

ON-ROAD VEHICLES

For purposes of the CMP, the following on-road vehicle classifications are used:

Vehicle Classification	GVWR
Light Heavy-Duty (LHD)	14,001 to 19,500 pounds
Medium Heavy-Duty (MHD)	19,501 to 33,000 pounds
Heavy Heavy-Duty (HHD)	Over 33,000 pounds

[3] Public agencies are exempt from this requirement.

The proposed vehicle must be in the same weight class as the existing vehicle (LHD, MHD or HHD). The engine must be certified to the applicable heavy-duty intended service class as shown on the engine certification Executive Order. However, the following cases may be allowed: 1) MHD engines may be installed in HHD vehicles with GVWR up to 36,300 lbs. (10 percent higher than 33,000 lbs. GVWR) with written warranty verification by engine and chassis manufacturer, or 2) HHD engines may be installed in MHD vehicles if necessary for vocational purposes but only if the GVWR are within 10 percent of the HHD intended service class (i.e., GVWR of 29,701 lbs. or greater).

Executive Orders for on-road vehicles may be downloaded at: http://www.arb.ca.gov/msprog/onroad/cert/cert.php.

Project emission reductions will be based on the lower of two 12-month periods of California usage during the previous twenty-four months. Fleet averages cannot be used.

Vehicle registration gap between March 1, 2020 and June 1, 2020 is acceptable provided that 24-month continuous registration would be demonstrated if the registration could be renewed between March 1, 2020 and June 1, 2020.

If usage was impacted during the period of March 1, 2020 to June 1, 2020, it can be substituted with usage from the 3-month period immediately before the 24-month period prior to application submittal.

Replacement

This project type involves the replacement of an older, in-use vehicle with a newer, cleaner vehicle. The replacement engine must be 2013 or newer engine model year certified by CARB at or below the optional low NOx standard of 0.10 g/bhp-hr and PM emission standard of 0.01 g/bhp-hr. In alignment with South Coast AQMD's 2016 AQMP, all on-road projects under the CMP must select the optional low-NOx, hybrid or zero-emission technologies. Diesel engines are not allowed in replacement vehicles except for Emergency Vehicles.

The South Coast AQMD requires that all on-road projects be operated within the South Coast AQMD jurisdiction for at least 75% of the time. Applicants must clearly demonstrate their compliance status with the applicable CARB regulation (i.e., Statewide Truck & Bus Regulation, Drayage Truck Regulation, Fleet Rule for Public Agencies & Utilities, Transit Bus Regulation, TRU ATCM, etc.) at the time of application submittal.

Please note that if you are an owner of a fleet with 10 or fewer vehicles (greater than 14,000 lbs. GVWR), you may be eligible for funding through the On-Road Voucher Incentive Program (VIP). Currently, the VIP is the only incentive funding program in the SCAB that funds a compliant diesel vehicle or repower project. Please refer to the South Coast AQMD's VIP Web page to explore funding opportunities for replacement at: www.aqmd.gov/vip.

In addition, the following on-road projects will be considered on a case-by-case basis:

- On-road vehicles with a GVWR between 8,501 and 14,000 pounds,
- Retrofits that reduce NOx by at least 15 percent; for engines that are certified above 0.01 g/bhp-hr PM, the retrofit must also reduce PM emissions by 85 percent,

- Zero-emission transport refrigeration units (TRUs). Hybrid TRU projects are not eligible.

Emergency Vehicles
Authorized emergency vehicles, as described in California Vehicle Code 165, including but not limited to fire apparatus, pumpers, ladder trucks, water tenders, and prisoner transport buses, are exempt from CARB regulations and therefore eligible for CMP funding. Eligible emergency vehicle projects are those in which an older, more polluting emergency vehicle is replaced with a new or used replacement vehicle with an engine meeting the current model year California emission standards. The older, replaced vehicle must be destroyed. Emergency vehicles are eligible for up to 80 percent of the eligible costs as outlined in the program guidelines.

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.

Repowers
This project type involves the repower of an existing, in-use engine with a new, cleaner engine. The replacement engine must be CARB-certified at or below the optional low-NOx emissions level of 0.10 g/bhp-hr NOx and 0.01 g/bhp-hr PM10. Repowers may be funded in various applications. However, due to technological constraints presented with the limited feasibility of newer engines with advanced emissions control equipment fitting into older chassis and maintaining durability, repowers with diesel engines are not eligible for on-road vehicles.

To ensure durability, certain repower projects may require prototype testing. If the project has been previously completed by the manufacturer, prototype testing is not required. The prototype testing must comply with the engine manufacturer quality assurance process that is equivalent to an Original Equipment Manufacturer (OEM) package. In these cases, a prototype vehicle (or vehicles) 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. Per the CMP guidelines, air districts may approve repower projects that meet the OEM quality assurance process described above, subject to the following:

- Moyer Program funding may not be used for any costs associated with the prototype vehicle or vehicles.
- Repower contracts may not be executed until the prototype testing specified by the engine manufacturer is successfully completed.
- Written documentation from the engine manufacturer confirming that the prototype was successful must be maintained in the project file.
- If the proposed repower has been done previously by the manufacturer on the same chassis/engine configuration, prototype testing is not required. The manufacturer must provide written confirmation that the previous work was performed successfully and met OEM requirements.

Conversions
Conversions involve the replacement or modification of the original engine or vehicle to include either a cleaner engine or other system that provides motive power and change of the fuel type used. Hybrid conversion systems using internal combustion engines must be certified according to "California Certification and Installation Procedures for Medium-and Heavy-Duty Vehicle Hybrid Conversion Systems." The baseline engine model year for hybrid conversions must be 2010 or newer. The conversion system manufacturer must provide written confirmation that the funded vehicle would not exceed the certified allowable limit. All-electric conversion systems must receive an exemption Executive Order per Vehicle Code section 27156.

OFF-ROAD COMPRESSION-IGNITION EQUIPMENT
This category includes off-road, mobile compression ignition equipment with engines greater than 25 horsepower. 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. The following off-road equipment projects may be eligible for funding:

- Repower: The replacement of an existing engine with a newer emission-certified engine, or zero-emission system, instead of rebuilding the existing engine to its original specifications.
- Retrofit: The installation of a CARB-verified emission control system on an existing engine. Examples include, but are not limited to, particulate filters and diesel oxidation catalysts.
- Equipment Replacement: The purchase of new or used equipment with an engine certified to the current emission standard (Tier 4 Final) or zero-emission technology to replace an older, fully functional piece of equipment that is to be scrapped.

For off-road replacement and repower projects (excluding marine engines), the CMP guidelines specify that the horsepower rating of the new (or replacement) engine must not be greater than 125 percent of the original manufacturer rated horsepower of the old (or existing) engine. If the new engine is greater than 125 percent, then the eligible funding amount will be based on the cost of an engine or equipment with a horsepower rating that is no higher than 125 percent of the existing engine horsepower rating. The applicant must pay the additional costs associated with the higher horsepower engine and obtain a price quote for an engine or equipment that is within the 125 percent range for the funding determination. In addition, verifiable records on the existing engine must be provided with the application to accurately identify the engine manufacture year and horsepower (e.g., photographs of engine labels, statement from engine manufacturers, etc.).

Construction Equipment
According to CARB's In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation), the construction fleets are categorized as follows:

- Small Fleets: Less than or equal to 2,500 total fleet horsepower
- Medium Fleets: Greater than 2,500 and less than 5,000 total fleet horsepower
- Large Fleets: Greater than 5,000 total fleet horsepower

Small fleets in compliance with CARB's Off-Road Regulation are eligible for CMP funding.

Medium and large fleets[4] are not eligible for new diesel engine funding through the CMP unless the fleet meets the regulation's January 1, 2024 compliance requirements at the time of the Y23 CMP application submittal.

Medium fleets that received prior CMP funding after January 1, 2020 are eligible for zero-emission project CMP funding.

Large fleets that received prior CMP funding after January 1, 2017 are eligible for zero-emission project CMP funding.

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.

Marine Vessel Projects
Marine vessel project types include engine repower and shore power. Only existing engines on a marine vessel with a fully functioning non-resettable hour meter are eligible for CMP funding.

Marine Engine Repower
Vessels not subject to the in-use compliance requirements of CARB's Commercial Harbor Craft (CHC) Regulation such as fishing vessels, pilot boats and work boats are eligible. Vessels subject to the in-use compliance requirements of CARB's Commercial Harbor Craft (CHC) Regulation (i.e., barge, crew/supply, dredge, excursion, ferry, towboat and tugboats) are also eligible as long as the vessel is fully compliant with the CHC Regulation (i.e., engines meet Tier 2 standards). 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. For all marine engine repower projects, the replacement engine must provide at least a 15 percent NOx reduction relative to the baseline engine.

[4] Large and Medium fleets are eligible to apply for funding through the Surplus Off-Road Opt-In for NOx (SOON) Program for new diesel engines, however additional demonstration of fleet compliance to the Off-Road Regulation is required. More information can be found in the Year 23 SOON Program Announcement.

In the fall of 2021, amendments to the existing CHC Regulation will be considered by CARB. Actions adopted by the CARB Board may impact the eligibility and/or funding outcome of marine vessel projects. For updates on the CHC Regulation, please consult CARB's CHC Regulation website at https://ww2.arb.ca.gov/our-work/programs/commercial-harbor-craft.

Shore Power Projects

Limited CMP funding opportunities remain for shore power projects due to the applicability of CARB's At-Berth Regulation. Applicants must submit their CARB-approved Initial Terminal Plan to document compliance with CARB's Shore Power regulation. The proposed projects must provide emission reductions that are surplus to regulatory requirements. Projects not subject to CARB's regulation are eligible.

Locomotives

All new locomotives and replacement engines must be certified to Tier 4 standards or cleaner to be eligible for CMP funding. There are very limited CMP funding opportunities for Class 1 freight railroads. Such a project will be 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.

The following project types are eligible for CMP funding:

1. Locomotive replacement (the reuse and/or recycling of the baseline chassis is allowed if the baseline engine is destroyed)
2. U.S. EPA-certified engine remanufacture kit or repower
3. Head-end power (HEP) unit (apply as an off-road engine project).

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.

Repower

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

Retrofit

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 and 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.

South Coast AQMD Jurisdiction

The South Coast AQMD 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 approximately 17 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 http://www.aqmd.gov/nav/about/jurisdiction for more information.

IMPORTANT PROGRAM INFORMATION

- Applicants **must** provide proof of ownership with their online application. This may include vehicle/equipment title, bill of sale, or in the case of marine vessel projects, the U.S. Coast Guard registration documentation.

- Project equipment must be domiciled within the SCAB and operate a minimum of 75% of the time within the boundaries of the SCAB except locomotives which are required to operate a minimum of 51% within the SCAB.

- Applicants **must** provide vendor quotes with their application to document the cost of the low- or zero-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 replacement and/or retrofit, infrastructure), subject to funding caps and program cost-effectiveness limits. Eligible costs include installation labor and sales tax. **All quotes must have been obtained within 90 days prior to the application submittal date.**

- Applicants must provide legible engine tag photos of the baseline engine(s) or manufacturer specifications that document the engine serial number, horsepower, model year and engine family number, emissions certification level and CARB Executive Order (if controlled).

- Applications for fuel and engine technologies that are not certified, verified or approved by CARB, or falling outside the categories specifically discussed in this PA, may be referred to CARB for determination of CMP eligibility on a case-by-case basis. Please discuss these projects with South Coast AQMD staff prior to application submittal. Projects submitted for CARB case-by-case review will require the applicant to provide additional justification and documentation regarding the project and the applicant's justification for such consideration.

- A number of the CARB fleet rules and air quality regulations impact CMP eligibility. Compliance with existing CARB regulations is a pre-requisite for CMP funding. Only emission 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 vehicle/equipment requests under the CMP provide surplus emission 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 5, 2023, whichever is earlier.

- All project invoices must be submitted for payment no later than May 5, 2023. Projects which have not invoiced by this date may forfeit their funding.

- No third-party contracts will be executed.

- Pre- and post-inspection of all vehicles/engines/equipment approved for funding will be conducted, as required. However, due to the impact of Covid-19 and to ensure the safety of the staff and the public, inspections of all vehicles/engines/equipment may be conducted virtually via remote inspections depending on the status of the pandemic. Applicants must make all equipment available for remote inspections unless otherwise specified during contract preparation, or through updates from South Coast AQMD. Documentation of compliance with existing regulatory requirements is required at the time of pre-inspection.

- Destruction of the engine and/or equipment being replaced is required for repower or replacement projects and will also be conducted virtually via remote inspections, unless otherwise specified.

- The project's cost effectiveness will be based on the historical usage of the existing equipment for the previous two years. The usage for off-road equipment projects will be based on hours (except for locomotive projects, which require annual fuel consumption), and the usage for on-road vehicle projects will be based on mileage. The applicant must provide the historical usage records for the equipment as part of the application. If historical usage documentation is not available, the proposed annual usage provided by the applicant will be used to determine the project's cost effectiveness and specified as a requirement in the contract. For on-road projects, the emission reductions will be based on the lower of the two 12-month periods of California usage during the previous twenty-four months. Low usage during the period of March 1, 2020 and June 1, 2020 can be substituted with the 3-month period that precedes the 24-month period prior to application submittal. Fleet averages cannot be used. Registration gaps during this period can be accepted if the vehicle was registered prior to March 1, 2020 and immediately after June 1, 2020.

PROGRAM ADMINISTRATION

South Coast AQMD's CMP is administered locally through its Technology Advancement Office. The South Coast AQMD reserves the right to allocate its CMP funds among the program categories or to specific projects in accordance with South Coast AQMD priorities.

All qualified applications submitted in response to this PA will first be evaluated for completeness. South Coast AQMD staff will notify each applicant of an incomplete application and request the additional information within thirty (30) business days of the application submittal due date. Applicants will have at least seven (7) business days to provide any missing information requested in South Coast AQMD's notification. It will be the applicant's responsibility to submit the missing or incomplete information within the time specified by South Coast AQMD staff. Only completed applications can move forward in the evaluation process; applications that remain incomplete after the delineated response period may be rejected and will not be evaluated or further considered under the CMP.

Each project will be evaluated for its status as a DAC or low-income community, as discussed in Section IV below. Each project will also be evaluated for cost effectiveness and ranked accordingly, except for infrastructure projects. Infrastructure projects are not subject to a cost-effectiveness limit, but instead will be evaluated on a competitive basis using metrics that include, but are not limited to: fleet usage commitments, project type (i.e., public, private, solar, wind, renewable natural gas), expected vehicle usage/throughput, cost share, and percentage of renewable source.

SCHEDULE OF EVENTS

Issue PA2021-05	March 5, 2021
Workshops	Information on virtual pre-recorded presentations and other virtual meetings (as needed) to be posted on www.aqmd.gov/moyer in April 2021
All Applications Due by 1:00 pm	**Tuesday, June 1, 2021**
Awards Consideration by the Board	October-November 2021
Contract Execution	March thru June 2022

ALL APPLICATIONS MUST BE RECEIVED VIA SOUTH COAST AQMD'S CMP ONLINE APPLICATION PROGRAM NO LATER THAN 1:00 P.M. ON TUESDAY, JUNE 1, 2021

Access to South Coast AQMD's CMP Online Application Program (OAP) is provided at: www.aqmd.gov/moyer.

In light of Covid-19 and efforts to ensure public safety, South Coast AQMD will not hold public workshops during the application period. Instead, pre-recorded presentations and other virtual webinars (as needed) providing background and assistance with program

requirements, eligibility and a tutorial for the OAP, will be posted on www.aqmd.gov/moyer after April 2021.

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 South Coast AQMD contracts.

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

Walter Shen
Science and Technology Advancement
South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765
Phone (909) 396-2487/FAX (909) 396-3252
wshen@aqmd.gov

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 5, 2023, whichever is earlier. **Unsigned applications may 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 South Coast AQMD. The project applicant is responsible for developing detailed project plans and ordering equipment that complies with the program criteria and guideline requirements. 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, surplus, quantifiable and enforceable in accordance with CMP guideline requirements.
- Project equipment must be domiciled within the boundaries of the SCAB.
- Meet the cost-effectiveness limit, as described in this PA and the CMP Guidelines, and subsequent CMP Advisories.
- For repower and replacement projects, the replacement engine must achieve an annual NOx emissions benefit of at least 15 percent to receive any funding for NOx reductions.

- Commit that project engines or equipment operate in service for the full project life, a minimum of three years (with the exceptions of 1-year life for on-road and 2-year life for small off-road fleets), and at least 75 percent of annual operation must occur within the South Coast AQMD except for line-haul locomotives. The locomotives may be eligible for funding with a minimum of 51% annual operation within the South Coast AQMD.
- The cost-effectiveness calculation is based on the percent operation within the South Coast AQMD boundary. Project life is the number of years used to determine the cost effectiveness and is equal to the contract term. The contract will include the percent operation as a minimum requirement (75% for all projects, except locomotives, which are allowed a 51% minimum).
- Commit that all vehicles/engines/equipment are in operation within 18 months of contract execution or by May 5, 2023, whichever is earlier.
- Provide for appropriate recordkeeping during the project life (i.e., annual mileage, fuel consumption and/or hours of operation), including submission of annual reports as detailed below.
- Ensure that the project complies with all applicable rules and regulations, and the resulting emission reductions from the 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 South Coast AQMD or CARB for audit and inspections.

DELIVERABLES

The contract will describe how the project will be monitored and what type of information must be submitted as part of the reporting requirements. At a minimum, the South Coast AQMD expects to receive an annual report for each year during the full contract term, or project life, which provides the annual miles or hours of operation[5], where the vehicle or equipment was operated, and operational and maintenance issues encountered and how they were resolved. South Coast AQMD reserves the right to verify the information provided.

Reporting forms are available online at: www.aqmd.gov/moyer.

SECTION III - APPLICATION SUBMITTAL REQUIREMENTS

Applicants must apply for CMP funding using the South Coast AQMD's CMP Online Application Program at: www.aqmd.gov/moyer. In addition, all Business Information Forms[6], including 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. Paper applications will not be accepted.

[5] Locomotive projects shall report annual fuel consumption.
[6] www.aqmd.gov/moyer

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 South Coast AQMD. Although the applicant will not be automatically disqualified by reason of work performed for such firms, the South Coast AQMD reserves the right to consider the nature and extent of such work in evaluating the application. Conflicts of interest will be screened on a case-by-case basis by the South Coast AQMD 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.

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. The vendor quotes must be dated within 90 days of the application submittal date. Applicants need to inform vendors of the time frame of the award process so that they can estimate prices based on the future/projected order/purchase date.

Purchase orders or other purchase commitments shall not be placed until after the date of award approval by the South Coast AQMD Governing Board. Purchase orders may be placed after South Coast AQMD Governing Board approval and in advance of a fully executed contract, but these orders/commitments are placed at the applicant's own risk[7].

The CMP will fund only a percentage of the cost of the low emission or zero-emission technology based on the type of project**.** The proposed low-emission or zero-emission technology must be certified, verified or approved by CARB in most cases[8]. No administrative or operational costs will be funded.

All project costs must be clearly indicated in the application. In addition, applicants must disclose all sources of co-funding, including the name of the funding source and amount of funding 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 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.

Applicants are not required to calculate a project's cost effectiveness. Methodologies for calculating cost effectiveness are provided in the CARB Moyer Guidelines at: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_c.pdf.

APPLICATION SUBMISSION

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

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[7] Any purchase order/purchase commitment placed prior to the South Coast AQMD Governing Board approval of the project are prohibited by the CMP. However, orders/commitments placed after South Coast AQMD Governing Board approval but in advance of a fully executed contract are at the purchaser's own risk.

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

Grounds for Rejection: An application may be immediately rejected if:

- Does not include correct documentation and other forms required.
- All applications are not signed by an individual authorized to represent the firm

Staff Contact Information: South Coast AQMD staff contacts for each category are listed in Table 1 below. Applicants are strongly encouraged to contact South Coast AQMD staff to discuss their project prior to submitting an online application to ensure program eligibility.

Business Information Forms: Consists of business information forms that **must** be completed and submitted with the online application. Please note, if recommended for an award, you will be required to submit an updated Campaign Contribution Disclosure form at a later date. Download these forms at www.aqmd.gov/moyer.

Electronic Submittal: The required method of delivery for this solicitation is through South Coast AQMD's CMP Online Application Program (OAP), available at: www.aqmd.gov/moyer. This online system allows applicants to submit applications electronically to the South Coast AQMD prior to the date and time specified below. South Coast AQMD "Business Information Forms" requiring signatures must be scanned and uploaded to the electronic application in PDF format. The system will not allow applications to be submitted after the due date and time.

First-time users must register as a new user to access the system. Applicants will receive a confirmation email after all required documents have been successfully uploaded. A tutorial of the system will be provided at the pre-application workshops and you may contact the Project Officer listed in Table 1 if you would like additional assistance.

Due Date

ALL APPLICATIONS MUST BE RECEIVED VIA SOUTH COAST AQMD'S CMP ONLINE APPLICATION PROGRAM (OAP)
NO LATER THAN 1:00 P.M. ON TUESDAY, JUNE 1, 2021

Access to South Coast AQMD's CMP Online Application Program (OAP) is provided at: www.aqmd.gov/moyer.

Missing Information – Within thirty (30) business days of the online application submittal due date of June 1, 2021, South Coast AQMD will email letters to applicants regarding the missing or incomplete information. Applicants will have seven (7) business days to provide any missing information requested in the letter. It will be the applicant's responsibility to submit the missing or incomplete information within the time specified by South Coast AQMD staff. Only complete applications can move forward in the evaluation process.

Disposition of Applications - The South Coast AQMD reserves the right to reject any or all applications. All responses become the property of the South Coast AQMD. A copy of each application not selected for funding shall be retained for one year. Additional copies and materials will be returned only if requested and at the applicant's expense.

SECTION IV - APPLICATION EVALUATION/CONTRACTOR SELECTION CRITERIA

South Coast AQMD staff will evaluate all qualified online applications and make recommendations to the Governing Board for final selection of project(s) to be funded. Each project will be evaluated based on two primary criteria: (1) the cost effectiveness of NOx, PM10 and ROG reduced, and (2) the project's status with respect to the disadvantaged community and low-income criteria prescribed by CARB.

Note: Infrastructure projects are not subject to a cost-effectiveness limit but instead will be evaluated on a competitive basis using metrics that include, but are not limited to: fleet usage commitments, public access, project type (i.e., public, private, solar, wind, renewable), expected vehicle usage/throughput and cost share.

Be aware that there is a possibility that due to program priorities, cost effectiveness or funding category limitations (i.e., caps), project applicants may be offered only partial funding, and not all applications that meet the cost-effectiveness criteria may be funded.

At least 50 percent of South Coast AQMD's CMP funds are targeted for projects that meet the criteria of a disadvantaged or low-income community. The Office of Environmental Health Hazard Assessment (OEHHA) in the California Environmental Protection Agency (CalEPA) has developed the California Communities Environmental Health Screening Tool: CalEnviroScreen Version 3.0 (CalEnviroScreen 3.0). The CalEnviroScreen 3.0 tool will be used by South Coast AQMD to identify projects that qualify as a DAC, which is defined as scoring in the top 25th percentile, and will strive to maximize the benefits to these communities from this PA. All applications will be assessed with the CalEnviroScreen tool to identify and verify if the project will benefit a DAC. This tool is available at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

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 may be established that allows payment upon completion of key milestones, as delineated in the contract.

SECTION VI: SOUTH COAST AQMD STAFF CONTACTS AND ADDITIONAL RESOURCES

The South Coast AQMD staff contacts are listed in Table 1 by project category. Copies of the Program Announcement, Business Information Forms and a sample South Coast AQMD CMP contract may be accessed at: www.aqmd.gov/moyer.

Table 1: CMP Staff Contacts

Project Category	Staff Contact	Phone Number	Email
On-Road Heavy-Duty Vehicles	Tom Lee	(909) 396-2270	tlee@aqmd.gov
Off-Road Equipment	Walter Shen Alyssa Yan Darren Ha	(909) 396-2487 (909) 396-2024 (909) 396-2548	wshen@aqmd.gov ayan@aqmd.gov dha@aqmd.gov
Cargo Handling Equipment Electrification	Greg Ushijima	(909) 396-3301	gushijima@aqmd.gov
Marine Vessels	Nick Volpone Arnold Peneda	(909) 396-2636 (909) 396-2475	nvolpone@aqmd.gov apeneda@aqmd.gov
Shore Power	Greg Ushijima	(909) 396-3301	gushijima@aqmd.gov
Locomotives	Greg Ushijima Walter Shen	(909) 396-3301 (909) 396-2487	gushijima@aqmd.gov wshen@aqmd.gov
Infrastructure	Yuh Jiun Tan Tom Lee	(909) 396-2463 (909) 396-2270	ytan@aqmd.gov tlee@aqmd.gov

WEBSITE LINKS TO CARB RULES THAT AFFECT CMP ELIGIBILITY

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

Drayage Truck Regulatory @ **https://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm**

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

In-Use Off-Road @ **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**

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South Coast
Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Business Information Request

Dear South Coast AQMD Contractor/Supplier:

South Coast Air Quality Management District (South Coast AQMD) 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 not be able to establish you as a vendor. This will delay any payments and would still 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,

Sujata Jain
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

South Coast
Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

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 South Coast AQMD,_____(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 **for contracts or purchase orders funded in whole 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.

Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with South Coast AQMD Procurement Policy and Procedure:

Check all that apply:

☐ Small Business Enterprise/Small Business Joint Venture ☐ Women-owned Business Enterprise
☐ *Local business* ☐ *Disabled Veteran-owned Business Enterprise/DVBE Joint Venture*
☐ Minority-owned Business Enterprise ☐ 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 South Coast AQMD at the time of bid application.
- performs 90 percent of the work within South Coast AQMD'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 South Coast AQMD 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. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

___ - ___ - ____

or

Employer identification number

__ - _____

Part II Certification

Under penalties of perjury, 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 for Part II, later.

Sign Here | **Signature of U.S. person** ▶ | **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

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, *later.*

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

4. 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*, later, for further information.

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 Pub. 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.

3. 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 24% 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,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. 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

5. 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*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

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*, later, 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 (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a 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 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 on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on 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

[1] See 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. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

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.

If you are a single-member LLC that is disregarded as an entity separate from its owner, 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 *What Name and Number To Give the Requester,* later, 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 ITIN, 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. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

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 item 1, 4, or 5 below indicates 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), ABLE accounts (under section 529A), 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	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. 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:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. 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
15. 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

[1] 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.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You 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*, earlier.

*__Note:__ The 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 Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic 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 report them at *www.ftc.gov/complaint*. You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* 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.

TAXABLE YEAR

CALIFORNIA FORM

2021 Withholding Exemption Certificate 590

The payee completes this form and submits it to the withholding agent. The withholding agent keeps this form with their records.

Withholding Agent Information

Name

Payee Information

Name

☐ SSN or ITIN ☐ FEIN ☐ CA 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 code

Exemption Reason

Check only one box.

By checking the appropriate box below, the payee certifies the reason for the exemption from the California income tax withholding requirements 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 nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.

☐ **Corporations:**
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to have a permanent place of business in California or ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.

☐ **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 registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.

☐ **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 Pension/Profit-Sharing Plans:**
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.

☐ **California Trusts:**
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly 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 the time of death. The estate will file a California fiduciary tax return.

☐ **Nonmilitary Spouse of a Military Servicemember:**
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

CERTIFICATE OF PAYEE: Payee must complete and sign below.

To learn about your privacy rights, how we may use your information, and the consequences for not providing the requested information, go to **ftb.ca.gov/forms** and search for **1131**. To request this notice by mail, call 800.852.5711.

Under penalties of perjury, I declare that I have examined the information on this form, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. I further declare under penalties of perjury that if the facts upon which this form are based change, I will promptly notify the withholding agent.

Type or print payee's name and title _____ Telephone _____

Payee's signature ▶ _____ Date _____

2020 Instructions for Form 590

Withholding Exemption Certificate

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

General Information

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. For more information, See General Information B, Income Subject to Withholding.

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a California 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 more information, 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, Real Estate Withholding Statement, to claim an exemption from the real estate withholding requirement.

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

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 (completed and signed) 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 exemption certificate, the withholding agent may accept a letter from the payee as a substitute explaining why they are 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 (TIN).

The certification does not need to be renewed annually. The certification on Form 590 remains valid until the payee's status changes. The withholding agent must retain a copy of the certification or substitute for at least five years after the last payment to which the certification applies. The agent must provide it to the FTB upon request.

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 nonwage 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 see General Information E, Military Spouse Residency Relief Act (MSRRA), and 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 it has qualified through the CA SOS to transact intrastate business. 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 TIN and check the appropriate TIN box.

You must provide a valid 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 – Follow the country's practice for entering the city, county, province, state, country, and postal code, as applicable, in the appropriate boxes. **Do not** abbreviate the country name.

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

Withholding Agent Instructions

Do not send this form to the FTB. The certification on Form 590 remains valid until the payee's status changes. The withholding agent must retain a copy of the certificate or substitute for at least five years after the last payment to which the certificate applies. The agent must provide it to the FTB upon request.

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, Form 592-PTE, Pass-Through Entity Annual Withholding Return, Form 592-Q Payment Voucher for Pass-Through Entity Withholding, and Form 592-V, Payment Voucher for Resident or Nonresident Withholding.

Additional Information

Website:	For more information, go to **ftb.ca.gov** and search for **nonwage**. **MyFTB** offers secure online tax account information and services. For more information, go to **ftb.ca.gov** and login or register for MyFTB.
Telephone:	888.792.4900 or 916.845.4900, Withholding Services and Compliance phone service
Fax:	916.845.9512
Mail:	WITHHOLDING SERVICES AND COMPLIANCE MS F182 FRANCHISE TAX BOARD PO BOX 942857 SACRAMENTO CA 94257-0651

For questions unrelated to withholding, or to download, view, and print California tax forms and publications, or to access the TTY/TDD numbers, see the Internet and Telephone Assistance section.

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 disability 711 or 800.735.2929 California relay service

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
TTY/TDD:	800.822.6268 para personas con discapacidades auditivas o de habla 711 ó 800.735.2929 servicio de relevo de California

Certification Regarding
Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property:

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

_____

Typed Name & Title of Authorized Representative

_____

Signature of Authorized Representative Date

❑ I am unable to certify to the above statements. My explanation is attached.

_____

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 (South Coast AQMD) 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 South Coast AQMD 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 South Coast AQMD; 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, South Coast AQMD 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 South Coast AQMD Governing Board Members can be found at South Coast AQMD website (www.aqmd.gov). The list of current MSRC members/alternates can be found at the MSRC website (http://www.cleantransportationfunding.org).

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) Parent subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.

(2) Otherwise related business entity. Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one 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 • www.aqmd.gov

Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

- ☐ Individual (Employee, Governing Board Member)
- ☐ Vendor/Contractor
- ☐ 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 Number	
City	State	Zip	Country
Taxpayer ID Number	Telephone Number	Email Address	

Authorization

1. I authorize South Coast Air Quality Management District (South Coast AQMD) 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 South Coast AQMD 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 South Coast AQMD for distribution. This will delay my payment.
2. This authorization remains in effect until South Coast AQMD receives written notification of changes or cancellation from you.
3. I hereby release and hold harmless South Coast AQMD 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.

To be Completed by your Bank

Staple Voided Check Here

Name of Bank/Institution		
Account Holder Name(s)		
☐ Saving ☐ Checking	Account Number	Routing Number
Bank Representative Printed Name	Bank Representative Signature	Date
ACCOUNT HOLDER SIGNATURE:		Date

For South Coast AQMD Use Only

Input By _____ Date _____

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 4

PROPOSAL: Amend Contracts for Enhanced Fleet Modernization Program and Execute Contract for Program Support

SYNOPSIS: Since 2015, the South Coast AQMD has been implementing an Enhanced Fleet Modernization Program (EFMP), branded as Replace Your Ride. The program is administered with assistance from three contractors providing case management and remote sensing technical support. These actions are to amend contracts with three consultants to add funds for continued program support and execute a contract to provide income verification service for the program, both using funds from the HEROS II Special Revenue Fund (56).

COMMITTEE: Technology, February 19, 2021; Recommended for Approval

RECOMMENDED ACTIONS:

1. Authorize the Chairman to amend three contracts for continued support with the EFMP and add funds from the administrative portion of the HEROS II Special Revenue Fund (56) to:
   A. Foundation for California Community Colleges, not to exceed $450,000;
   B. Green Paradigm Consulting, not to exceed $450,000;
   C. Opus Inspection, Inc., not to exceed $500,000; and
2. Authorize the Chairman to execute a contract with Veri-Tax, Inc. not to exceed $60,000 from the administrative portion of the HEROS II Special Revenue Fund (56) to streamline the income verification process for participants.

Wayne Nastri
Executive Officer

MMM:NB:VW:TL

Background
Since 2015, South Coast AQMD has been implementing the EFMP, branded as Replace Your Ride, which is authorized by the AB 118 California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (Health and Safety Code Sections 44124-44127). South Coast AQMD's Replace Your Ride Program provides incentives to lower income motorists to scrap and replace their older, high-emitting vehicles with newer, cleaner models or other clean transportation options. Consistent with the objectives of the program, 93 percent of the grant recipients reside in disadvantaged communities and 88 percent are in the lowest income tier.

The program is currently oversubscribed, and a moratorium has been placed on new applications since October 15, 2020, pending the availability of additional funds from CARB. The program still has $4.5 million of project funds remaining to process applications that have already been submitted. The funds for the three consultants' contracts are nearly out of funds. In addition to case management work, the consultants handle the contracts with the over 60 dealerships that are partners in this program. Additional CARB funding is expected by the third quarter of 2021 for continued operation of the EFMP.

Staff currently verifies the income of participants by requesting tax transcripts from the Internal Revenue Service. The process is not user-friendly and can often delay voucher processing. Income verification is one of the required implementation steps to determine the voucher amount and ensure program integrity.

Proposal
Funding for the three contractors assisting with implementation of Replace Your Ride are almost fully expended. These actions are to amend their contracts by adding funds in the amounts shown in the following table, from the administrative portion of the HEROS II Special Revenue Fund (56).

Foundation for California Community Colleges	$450,000
Green Paradigm Consulting	$450,000
Opus Inspection	$500,000

Staff proposes to execute a new contract with Veri-Tax, Inc. not to exceed $60,000 to provide streamlined income verification services for the program. Each verification will be charged a $10 fee by Veri-Tax and the rate is based on a combined volume rate for South Coast AQMD and Bay Area AQMD, which also utilizes the service for their EFMP.

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. The request for sole source award for the Veri-Tax contract is made under provision B.2.c.(1): The unique experience and capabilities of the proposed contractor or contractor team. Veri-Tax is the market leader in this segment and is reputable for delivering the quickest income verification for account holders. This responsiveness is essential for the EFMP program to reduce the application backlog. Veri-Tax is also accustomed to servicing government agencies and is currently providing the same service to the Bay Area AQMD's EFMP program.

Benefits to South Coast AQMD
Successful implementation of Replace Your Ride will continue to provide incentives to qualifying lower income vehicle owners, including those residing in disadvantaged communities, and provide emissions reduction benefits to these communities and throughout the region. The services of Veri-Tax, Inc, will provide a streamlined income verification process which will improve efficiency, increase staff productivity, and help maintain program integrity.

Resource Impact
Total funding to be added to the consultants' contracts will not exceed $1.4 million and the contract with Veri-Tax, Inc. will not exceed $60,000. Revenue up to $2.1 million in administrative funds was previously recognized in 2020 into the HEROS II Special Revenue Fund (56) fund. There are sufficient administrative funds in the HEROS II Special Revenue Fund (56) for this fund.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 5

PROPOSAL: Execute Contracts for Hydrogen Infrastructure Projects and Fuel Cell Microgrid Study

SYNOPSIS: Research and development in the area of hydrogen infrastructure and microgrids is important as fuel cell technology transitions from light- to medium- and heavy-duty vehicles. These actions are to support High Flow Bus Fueling Protocol Development with Frontier Energy Inc. in an amount not to exceed $25,000, support California Heavy-Duty Hydrogen Infrastructure Research with National Renewable Energy Laboratory (NREL) in an amount not to exceed $25,000 and support California Hydrogen Systems Analysis with University of California, Davis (UC Davis) in an amount not to exceed $50,000 from the Clean Fuels Program Fund (31). The University of California, Irvine Advanced Power and Energy Program (UCI APEP) proposes a study to identify and quantify the steps required for wider deployment of microgrids using fuel cell technology. This action is also to execute a contract with UCI APEP to study fuel cell microgrid technology in an amount not to exceed $370,000 from the Clean Fuels Program Fund (31).

COMMITTEE: Technology, February 19, 2021; Recommended for Approval

RECOMMENDED ACTIONS:

1. Authorize the Executive Officer to:
   A. Execute a contract with Frontier Energy, Inc., to Support High Flow Bus Fueling Protocol Development in an amount not to exceed $25,000 from the Clean Fuels Fund (31);
   B. Execute or amend a contract with NREL to Support California Hydrogen Heavy-Duty Infrastructure Research in an amount not to exceed $25,000 from the Clean Fuels Program Fund (31);
   C. Execute a contract with UC Davis to Support California Hydrogen Systems Analysis in an amount not to exceed $50,000 from the Clean Fuels Program Fund (31); and

D. Execute a contract with UCI APEP to study fuel cell microgrid technology in an amount not to exceed $370,000 from the Clean Fuels Fund (31).

Wayne Nastri
Executive Officer

MMM:NB:JI:SH:LHM

Background

The deployment of hydrogen infrastructure is gaining more demand to support increasing fuel cell vehicles and secure the resiliency and reliability of the electricity system. The following four projects include hydrogen infrastructure related research and studies of microgrids using fuel cell technology.

<u>High Flow Bus Fueling Protocol Development</u>

Fueling methods are currently under development worldwide and are targeting several different conditions at the outlet of the dispenser, including gaseous hydrogen at 700 bar, 500 bar, 350 bar, cryo-compressed, as well as liquid hydrogen, depending on the size and vocation of the vehicle fleet and proximity to other hydrogen demands. The DOE H2@Scale program released a Cooperative Research and Development Agreement (CRADA) Call Area of Interest (AOI) 1: Fueling Components for Heavy-Duty Vehicles. Frontier Energy submitted a proposal with multiple partners including SoCalGas, Shell and NREL to model, test and validate the application of the mass-compensated Formula Protocol for high flow bus fueling. The mass-compensated formula was originally developed and applied to passenger car fueling.

<u>California Heavy Duty Hydrogen Infrastructure Research</u>

A team of California public agencies (CARB, CEC, Governor's Office of Business and Economic Development (GO-Biz), South Coast AQMD) and national laboratories formed a research partnership in 2017 focused on near-term hydrogen infrastructure development, deployment, and operation needs in California and was awarded DOE H2@Scale CRADA funds that year. Many of these partnerships had been in place for years through individual CRADA agreements and work scopes. The research partnership framework was intended to continue beyond that project for a long-lasting strategic partnership with the DOE, agencies, and national laboratories. As California has begun in earnest to expand its light-duty focus to include the medium- and heavy-duty fuel cell electric vehicle market, the research partnership submitted a project proposal to DOE's H2@Scale CRADA Call AOI 1: Fueling Components for Heavy-Duty Vehicles to build upon existing momentum and to advance the H2@Scale vision and the State of California's goals by developing a heavy-duty hydrogen reference station, fueling performance test device concepts and heavy-duty hydrogen station capacity model.

California Hydrogen Systems Analysis

The California Hydrogen Systems Analysis will build on and update existing work on carbon neutral hydrogen systems, which is extensive, but will represent a single cohesive analysis and plan for the state. It will include hydrogen's role in transportation, with all light-, medium-, and heavy-duty vehicles, as well as its use in industry and role as an emerging energy storage option for intermittent electric power. UC Davis Institute of Transportation Studies has several analytical tools and models in development that will support a very detailed study of these dynamics, and for the rollout of a hydrogen system over the next 30 years.

Study of Fuel Cell Microgrids

A microgrid is comprised of not only loads, but also the generation of power, with at least one point of connection to the grid, and the capability to island from the grid in the event of a grid outage. As an increasingly important and desired attribute, the islanding capability brings both enhanced reliability and resiliency to the community served and, rather than diesel backup generators powering critical loads, the microgrid can serve all the loads (not just the critical loads) with clean sources of power such as solar panels, batteries and fuel cells. In the proposed project, two targets for emission mitigation are backup generators with the seamless islanding afforded by microgrids powered by fuel cells, and the charging and fueling of battery and fuel cell electric buses at fleet microgrid hubs.

Proposal

High Flow Bus Fueling Protocol Development

This project will apply the SAE J2601 standard mass compensated formula protocol to 350 bar on-board storage systems for heavy-duty vehicles with H35HF (high flow) receptacles. NREL's H_2Fills model will be upgraded and utilized. NREL's high flow heavy-duty fueling dispenser and their heavy-duty vehicle simulator will be utilized for testing. This project will also conduct validation testing at an existing commercial H35HF hydrogen station.

This action is to execute a contract with Frontier Energy to co-fund $25,000 for the two-year project with a total cost of $570,500 that will leverage NREL's expertise, modeling capabilities, and high flow heavy-duty testing facilities, as well as in-use testing at Sunline Transit.

California Heavy Duty Hydrogen Infrastructure Research

This project will continue to conduct hydrogen infrastructure research efforts, focused on California heavy-duty hydrogen infrastructure priorities. Tasks in the project include heavy-duty reference station design, fueling performance test device design, and modeling of heavy-duty station capacity.

This action is to amend or execute a joint agreement with NREL to co-fund $25,000 for the two-year project with a total project cost of $1.114 million.

California Hydrogen Systems Analysis

This project proposes to:

- Analyze and model hydrogen's role in a carbon-neutral system of transportation, industry and energy storage through 2050;
- Assess existing policies to identify gaps over the next 5-10 years; and
- Study the role of hydrogen storage and other forms of storage including vehicle-to-grid (V2G) and power-to-gas (P2G) in grid serving both fuel cell and battery electric vehicles.

This action is to execute a contract with UC Davis to co-fund $50,000 for the two-year project with an overall cost of over $600,000.

Study of Fuel Cell Microgrids

This project proposes to:

- Replace Back-up Generators through Microgrid Deployment (Task 1); and
- Evaluate Zero-Emission Battery and Fuel Cell Electric Bus Microgrid Hubs (Task 2).

Task 1 will address replacing the increased use of diesel and gasoline backup generators with microgrids base loaded with fuel cell power generation and the transition from natural gas to locally sourced hydrogen. This study will: (1) identify alternative technologies that can replace diesel backup generators with a focus on renewable resources, hydrogen, and fuel cells; and (2) estimate the reduction in emissions associated with microgrids powered by fuel cells as an alternative to gasoline and diesel backup generators. In Task 2, the proposed project will address zero-emission bus electric charging and hydrogen fueling hubs by developing a rollout plan to charge and fuel a 100 percent zero-emission fleet of battery and fuel cell electric buses. The analysis will be used to model the evolution of hubs for charging and fueling zero-emission Medium- and Heavy-Duty drayage, utility, and long-haul vehicle microgrid hubs.

Sole Source Justification

Section VIII.B.2. of the Procurement Policy and Procedure identifies provisions under which a sole source award may be justified. This request for a 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 interests of South Coast AQMD. Specifically, these circumstances are B.2.d.(1): Projects involving cost-sharing by multiple sponsors. The major sponsors contributing financially to the California Hydrogen Systems Analysis include public and private partners such as Aramco, CEC, GM, Honda, Hyundai, Leighty Foundation, Shell, SoCalGas and Toyota. Participation in the California Hydrogen Systems Analysis project is only possible by sole source contract with UC Davis. The High Flow Bus Fueling Protocol Development and California Heavy Duty Hydrogen Infrastructure Research project were awarded as a

result of a competitive solicitation. The request for sole source award for Study of Fuel Cell Microgrids project is made under provision B.2.d.(8): Research and development efforts with educational institutions or nonprofit organizations. UCI is an educational institution and APEP is an umbrella organization that addresses the broad utilization of energy resources and the emerging nexus of electric power generation, infrastructure, transportation, water resources and the environment. Built on a foundation established in 1970 with the creation of the UCI Combustion Laboratory and the 1998 dedication of the National Fuel Cell Research Center, APEP focuses on education and research on clean and efficient distributed power generation and integration.

Benefits to South Coast AQMD
Supporting hydrogen infrastructure and fuel cell microgrid research projects is consistent with the draft *Technology Advancement Office Clean Fuels Program 2021 Plan Update* under "Hydrogen and Mobile Fuel Cell Technologies & Infrastructure," "Assessment and Technical Support of Advanced Technologies and Information Dissemination." and "Stationary Clean Fuels Technologies." South Coast AQMD supports the development, demonstration and commercialization of zero and near-zero emission vehicles with necessary infrastructure to support those vehicles including microgrids and strives to educate public and private organizations regarding the benefits and characteristics of these vehicles.

Resource Impacts
South Coast AQMD's support of four hydrogen related research projects will not exceed $470,000 from the Clean Fuels Program Fund (31).

South Coast AQMD's support of the High Flow Bus Fueling Protocol Development, provided through an agreement with Frontier Energy, shall not exceed $25,000 from the Clean Fuels Program Fund (31). Project partners and proposed funding are as follows:

Project Partner	Funding*	Percentage
Fuel Cell Technologies Office, U.S. DOE	$422,000	74%
SoCalGas	$80,000	14%
Shell	$20,000	4%
Sunline, Worthington, Frontier Energy (in-kind)	$25,500	4%
South Coast AQMD (*requested)*	$25,000	4%
Total (not to exceed)	**$572,500**	100%

*Subject to partial award; U.S. DOE funding may be scaled.

South Coast AQMD's support of the California Heavy-Duty Hydrogen Infrastructure Research Partnership, provided through a joint agreement with NREL, shall not exceed

$25,000 from the Clean Fuels Program Fund (31). Project partners and proposed funding are as follows:

Project Partner	Funding*	Percentage
Fuel Cell Technologies Office, U.S. DOE	$999,000	90%
CEC	$25,000	2%
GO-Biz (In-kind)	$25,000	2%
CARB (In-kind)	$40,000	4%
South Coast AQMD (*requested*)	$25,000	2%
Total (not to exceed)	**$1,114,000**	100%

*Subject to partial award; U.S. DOE funding may be scaled

South Coast AQMD's support of the California Hydrogen Systems Analysis, provided through a contract with UC Davis, shall not exceed $50,000 from the Clean Fuels Program Fund (31). Total project funding over $600,000 has already been committed by public and private partners such as Aramco, CEC, GM, Honda, Hyundai, Leighty Foundation, Shell, SoCalGas and Toyota.

Project Partner	Funding	Percentage
Aramco, CEC, GM, Honda, Hyundai, Leighty Foundation, Shell, SoCalGas and Toyota	>$550,000	92%
South Coast AQMD (*requested*)	$50,000	8%
Total (not to exceed)	**>$600,000**	100%

South Coast AQMD's support of the Study of Fuel Cell Microgrids project shall not exceed $370,000 from the Clean Fuels Program Fund (31). Proposed funding is as follows:

Project Partner	Funding	Percentage
Port of Long Beach, U.S. DOE, UCI, Anteater Express	$140,000	28%
South Coast AQMD (*requested*)	$370,000	72%
Total (not to exceed)	**$510,000**	100%

Sufficient funds are available from the Clean Fuels Program 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.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 6

PROPOSAL: Amend Contract for Kore Infrastructure Project

SYNOPSIS: In June 2020, the Board approved a contract amendment for Kore Infrastructure LLC (Kore) for a Renewable Natural Gas Commercial Field Test project, including construction of a pyrolysis system on Southern California Gas Company (SoCalGas) property in Los Angeles. The project is to test various biomass feedstocks for commercial production of renewable natural gas. This action is to amend the contract with Kore to extend the deadline to complete construction, commissioning and testing efforts by October 1, 2021.

COMMITTEE: Technology, February 19, 2021; Recommended for Approval

RECOMMENDED ACTION:
Authorize the Chairman to amend the contract with Kore Infrastructure LLC to extend the deadline to complete construction, commissioning and testing efforts by October 1, 2021.

Wayne Nastri
Executive Officer

MMM:NB:JI:PMB

Background

In June 2020, the Board approved a contract amendment providing a six-month extension to complete a milestone for Kore Infrastructure LLC's (Kore) Renewable Natural Gas Commercial Test project. The milestone included completing construction and commissioning of a pyrolysis system on SoCalGas property in Los Angeles and initiating testing efforts. This six-month extension was predicated on Kore's ability to resume construction due to restrictions associated with "Safer-At-Home" requirements imposed by the City of Los Angeles. From July 2020, Kore, SoCalGas and South Coast AQMD conducted bi-weekly virtual meetings to monitor return to work efforts. In October 2020, Kore informed SoCalGas and South Coast AQMD staff that it had

received clarification on the City's Safer-At-Home policies regarding construction projects and that it was able to resume construction efforts. This notification effectively initiated the six-month extension through April 2021. Kore's return to work clearance was followed in November 2020 with its confirmation that it had also secured capital to complete the project, also identified as a factor impacted by the global pandemic. Kore and SoCalGas subsequently secured a final land use extension through December 30, 2021. With the aforementioned issues resolved, Kore secured the necessary staffing and construction personnel and permit extensions, to recommence project construction and proceed to project completion. Following is a summary of the impacts incurred to this project due to the COVID-19 pandemic.

Engineering and Manufacturing

Kore's engineers and engineering contractors are now hybridizing their work schedules to include work at the job site when needed and from their homes otherwise. Subcontract engineers are also now on-site when needed and continuing to provide support from home otherwise. Most suppliers of construction materials have resumed regular operating hours or have developed new work protocols to meet health concerns, and necessary supplies are not currently restricting construction efforts.

Safer-At-Home Orders

Preliminarily, as a result of the City of Los Angeles Safer-At-Home Orders, Kore suspended construction and office-based operations until the risks and regulations could be better understood. Safer-At-Home orders were not explicit with regards to construction activities, and there was no experience to evaluate the safety of staff and contractors if they were to continue construction activities. After consulting directly with the City of Los Angeles, Kore received information that construction operations are deemed an "Essential Activity" and are therefore exempt from the Safer-At-Home orders, provided construction activities conform to the COVID guidelines published by the Los Angeles Department of Building and Safety (LADBS). Subsequently, Kore consulted with its contractor regarding resumption of work and confirmed it was familiar with the LADBS requirements and could resume the site work safely and in compliance with these guidelines. Kore staff has implemented the required safety procedures, provided training to contractor personnel and is actively enforcing on-site compliance.

City Services

Kore has ensured that all required permits were extended following the clearance to resume construction efforts at the facility. Inspections associated with permit activities are also expected to resume.

Access to Capital Markets
Kore's access to critical funding in the capital markets was impacted by the effects of the COVID-19 pandemic. Kore was able to secure the necessary funding in late October 2020 to complete construction at the Olympic site.

Proposal
In November 2020, Kore was able to resume construction of the pyrolysis test system on SoCalGas property in Los Angeles. The uncertainties brought about by the COVID-19 global pandemic, including on-the-jobsite staffing and labor, manufacturing and distribution of parts and equipment, and available capital, resulted in a six-month delay to this project. Due to the extent of these disruptions, Kore is requesting additional time to complete construction, commissioning, and testing efforts, demonstrate its pyrolysis system and generate data from the conversion of biomass feedstocks to renewable natural gas. South Coast AQMD and SoCalGas have worked collaboratively to maintain communications with Kore, and to monitor and support the resumption and completion of this project. SoCalGas has extended the site use agreement with Kore to December 30, 2021 to complete the demonstration project and return the site to SoCalGas. South Coast AQMD staff has responded in kind by extending the research and development permit to Kore though the end of 2021 that includes onsite portable electric generation and any necessary flaring operations.

Staff proposes amending Kore's contract to provide an extension through October 1, 2021 to complete construction, commissioning and testing efforts. In addition to SoCalGas' land-use agreements and South Coast AQMD permits, Kore is ensuring continued compliance with all permitting authorities having jurisdiction, including the City of Los Angeles, to continue construction of the field test project at the Olympic site. Staff will continue to maintain communications with Kore staff and with SoCalGas and will resume site visits to monitor progress and provide the Technology Committee with updates on project status. This action is to amend the contract with Kore Infrastructure LLC to extend the deadline to complete construction, commissioning and testing efforts to October 1, 2021.

Benefits to South Coast AQMD
The South Coast Air Basin is classified as an extreme nonattainment area for ozone under the federal Clean Air Act. Wide-scale deployment of advanced technologies, including near-zero emission engines and fuel cells, is a critical step toward achieving the air quality standards which will have considerable public health benefits for our region. When combined with renewable fuels and its near-zero carbon footprint, these technologies are expected to provide a near-term, cost-effective option for addressing criteria pollutants and achieving GHG benefits. Ensuring greater supply of locally produced renewable fuels will address local, state and federal environmental regulations and goals. This proposed project is included in the *Technology Advancement Office Clean Fuels Program 2020 Plan Update* under the category of "Infrastructure and

Deployment," specifically as "Demonstrate Natural Gas Manufacturing and Distribution Technologies including Renewables."

Resource Impacts
There is no fiscal impact associated with this no-cost time extension to an existing contract.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 7

PROPOSAL: Approve South Coast AQMD Annual Investment Policy and Delegation of Authority to Appointed Treasurer to Invest South Coast AQMD Funds

SYNOPSIS: The South Coast AQMD adopts an annual investment policy which, if done, must be considered at a public meeting of the Board. State law additionally requires South Coast AQMD to annually renew its delegation of authority to its treasurer to invest or to reinvest funds of the local agency. This action is to approve the Annual Investment Policy and the Resolution to renew delegation of authority to the Los Angeles County Treasurer to invest and reinvest South Coast AQMD funds.

COMMITTEE: Investment Oversight, February 19, 2021; Recommended for Approval

RECOMMENDED ACTIONS:
1. Approve the attached Annual Investment Policy, and
2. Adopt the attached Resolution to renew delegation of authority to the Los Angeles County Treasurer to invest and reinvest South Coast AQMD funds.

Wayne Nastri
Executive Officer

SJ:tm

Background

State law provides that the Chief Fiscal Officer of a local agency may annually provide to any investment oversight committee and local legislative body an investment policy that the legislative body shall consider at a public meeting (Government Code Section 53646(a)(2).) In addition, state law (Government 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.

On April 12, 1996, the Board approved a recommendation to minimize South Coast AQMD investments in the Los Angeles County Pooled Surplus Investment Portfolio

(PSIP), by directing staff to work with the Los Angeles County Treasurer (South Coast AQMD's Treasurer) to make specific investments on behalf of South Coast AQMD. This change required the development of an annual statement of investment policy specific for South Coast AQMD.

South Coast AQMD's investment consultant, working with staff 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 South Coast AQMD 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. Minor updates have been made since that time to ensure compliance with changes to the California Government Code. There are revisions being recommended to the permitted investments set forth in the Investment Policy, which include: 1) a change to Banker's Acceptance to reflect two nationally recognized statistical rating organizations (NRSRO) instead of one; 2) a change to Negotiable Certificates of Deposit to reflect two NRSRO, instead of one; 3) a change to Medium Term Maturity Corporate Securities to be rated in a rating category "A" or its equivalent or higher by two NRSRO instead of one; and 4) a change to Mortgage Securities or Asset-backed Securities whereby all asset-backed securities must be rated in a rating category of "AA" or its equivalent or better rating, and all of the issuer's corporate debt rating must be in a rating category of "A or its equivalent or better, by at least two NRSRO instead of one.

The County of Los Angeles has provided excellent treasury management services to South Coast AQMD. These services include providing banking services, processing electronic payments to South Coast AQMD, and the investment of South Coast AQMD's cash balances. Staff is recommending that South Coast AQMD continue with the services provided by the Los Angeles County Treasurer. Staff further recommends adoption of the Resolution delegating authority to the Los Angeles County Treasurer to invest or reinvest our funds, or to sell or exchange securities.

Resource Impacts

Costs associated with South Coast AQMD treasury management operations are included in the FY 2020-21 Budget and will be included in the FY 2021-22 Budget.

Attachments

1. South Coast AQMD Annual Investment Policy
2. Resolution - 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 (South Coast AQMD). The objective of this Policy is to ensure all of South Coast AQMD's funds are prudently invested to preserve principal and provide necessary liquidity, while earning a market average rate of return.

South Coast AQMD 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 South Coast AQMD 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 South Coast AQMD employees and 457 deferred compensation plan funds) and investment activities under the direction of the South Coast AQMD 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. Safety of Principal. The primary objective of South Coast AQMD 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. South Coast AQMD 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 South Coast AQMD and the ability of South Coast AQMD to make Special Purpose Investments. South Coast AQMD 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. Market Rate of Return. South Coast AQMD'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 South Coast AQMD 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 South Coast AQMD funds in the State of California Local Agency Investment Fund will provide significant diversification, safety of principal and liquidity for the programs of the South Coast AQMD. Other Special Purpose Investments in a South Coast AQMD 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 South Coast AQMD 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 South Coast AQMD. The Treasurer shall be appointed at least annually by the South Coast AQMD 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 South Coast AQMD Governing Board. If the South Coast AQMD

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 South Coast AQMD 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 South Coast AQMD 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 South Coast AQMD'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 South Coast AQMD's investment portfolio for conformance with South Coast AQMD's Annual Investment Policy diversification and maturity guidelines, and make recommendations to the Chief Financial Officer as appropriate.

3. Provide comments to the South Coast AQMD 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 South Coast AQMD.

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 South Coast AQMD.

A. Standard of Care.

South Coast AQMD's Governing Board or persons authorized to make investment decisions on behalf of South Coast AQMD 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. South Coast AQMD'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 South Coast AQMD 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 South Coast AQMD including all segregated funds. All bond proceeds are excluded from Investable Funds. The Cash Flow Horizon is the time period in which the South Coast AQMD cash flow can be reasonably forecast. This Policy establishes the Cash Flow Horizon for South Coast AQMD idle or surplus funds to be three (3) years. The South Coast AQMD cash flow forecast must be updated at least every six months.

When the South Coast AQMD 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.

South Coast AQMD 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. South Coast AQMD 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.

South Coast AQMD 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. South Coast AQMD 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 South Coast AQMD'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) or 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), and 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 at least two NRSRO.

   Maximum maturities for bankers' acceptances are 180 days.

7. Negotiable Certificates of Deposit.

   Negotiable certificates of deposit must be issued by national or state-chartered banks, a federally- or state-licensed branch of a foreign bank, savings associations and state or federal credit unions. Negotiable CDs must be rated in a rating category of "A-1/A" or its equivalent, or higher, by at least two NRSRO.

   The South Coast AQMD will not purchase negotiable certificates of deposit of a savings association or credit union as Special Purpose Investments if a South Coast AQMD 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 three (3) 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 $500 million.
      iii. Has debt other than commercial paper, if any, that is rated in a rating category of "A", or its equivalent, or higher, 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 in a rating category of "A-1", or the equivalent, or higher, by a 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 higher by two NRSRO.

   Floating rate medium term notes may be used if interest resets at least quarterly.

   Maximum maturities for medium term maturity corporate securities are three years.

10. Mortgage Securities or Asset-backed Securities.

    All asset-backed securities must be rated in a rating category of "AA" or its equivalent or better rating and the issuer's corporate debt rating must be in a rating category of "A" or its equivalent or better by at least two NRSRO.

    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% or greater 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 South Coast AQMD.

    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. Floating Rate Securities.

    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 indexes 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.

    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 in a rating category of "A", or its equivalent, or higher, 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), with a maximum remaining maturity of five years or less, and which are eligible for purchase and sale within the U.S.

    Obligations of supranational institutions must be rated in a rating category of "AA", or its equivalent, or higher, by a NRSRO.

F. Diversification Guidelines.

Diversification limits ensure that at the time of investment the South Coast AQMD'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 South Coast AQMD'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.

Instrument	*Maximum % of Portfolio*
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*	Not Allowed
13. Variable and Floating Rate Securities	30%
14. Obligations of the State of California or any California local agency	30%
15. Obligations of Supranational Institutions	10%

* See Section V(E)(12).

Issuer/Counterparty	*Maximum % of Portfolio*
Any one Federal Agency or U.S. Government Sponsored Enterprise	50%
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%

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 South Coast AQMD. 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 in a rating category of "AA", or its equivalent, or higher, 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 in a rating category of "A", or its equivalent, or higher 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 South Coast AQMD 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 South Coast AQMD SPI separate account may from time to time be invested in a security whose rating is downgraded below the quality criteria permitted bythe 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 South Coast AQMD 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 South Coast AQMD funds invested in Special Purpose Investments outside of the Local Agency Investment Fund or the Pooled Surplus Investment Portfolio.

Approved March 5, 2021

ATTACHMENT 2

RESOLUTION NO. 21-_____

A Resolution of the South Coast Air Quality Management District (South Coast AQMD) Governing Board delegating authority to the Treasurer of the County of the Los Angeles to invest and reinvest funds of the South Coast AQMD.

WHEREAS, the Governing Board of the South Coast AQMD, desires to reaffirm the appointment of the Treasurer of the County of Los Angeles as Treasurer of the South Coast AQMD; and

WHEREAS, the Governing Board of the South Coast AQMD, pursuant to Section 40527 of the Health and Safety Code Section, has authority to appoint a Treasurer; and

WHEREAS, the Governing Board of the South Coast AQMD, 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.

THEREFORE, BE IT RESOLVED that the Governing Board of the South Coast AQMD hereby delegates to the Treasurer of the County of Los Angeles the authority to invest or reinvest funds of the South Coast AQMD.

AYES:

NOES:

ABSENT:

DATE: _____ _____

Clerk of the Boards

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 8

PROPOSAL: Authorize Purchase of Maintenance and Support Services for Servers and Storage Devices

SYNOPSIS: The servers and storage devices are used by enterprise-level software applications that currently support the Clean Air Support System for all South Coast AQMD core activities. Maintenance support for these systems will expire on April 30, 2021. This action is to obtain approval for the sole source purchase of hardware and software maintenance and support services for servers and storage devices from Hewlett Packard Enterprise Company for one year, in an amount not to exceed $120,000. Funds for these purchases are included in Information Management's FY 2020-21 Budget.

COMMITTEE: Administrative, February 12, 2021; Recommended for Approval

RECOMMENDED ACTION:
Authorize the Procurement Manager to purchase one year of maintenance and support services for South Coast AQMD servers and storage devices from Hewlett Packard Enterprise Company at a cost not to exceed $120,000.

Wayne Nastri
Executive Officer

RMM:MH:LG:hlp

Background
South Coast AQMD uses Hewlett-Packard Enterprise Company (HP) servers and storage devices running Windows Server and Linux operating systems. The HP servers support several production applications such as the Clean Air Support System (CLASS), Permit Processing, Finance, Compliance, NSR, Emission Fee Billing, Notice of Violations, Facility Permits, ERS Interim Reports, Subscription Services, Web Servers, PeopleSoft Financial and HCM database, OnBase document management system, Legal system, AQMP Modeling and Telemetry system. Hardware and software maintenance

and support services are required to ensure the continued operation of these programs with minimum interruption. Maintenance and support services for these servers expire on April 30, 2021.

In 2006, the Board approved release of an RFQ to select a vendor capable of providing the most cost-effective hardware and software maintenance and support services for servers. Only one vendor, HP, the company that is currently supporting the agency's servers, submitted a bid. HP is the sole manufacturer and provider of the hardware and software, and the only source for maintenance support licensing agreements. HP also provides the South Coast AQMD with substantial discounts through cooperative agreements.

Sole Source Justification
Section VIII.B.2 of the Procurement Policy and Procedure identifies circumstances under which a sole source purchase award may be justified. This request for a sole source award is made under provision VIII.B.2.c(2) and (3): The project involves the use of proprietary technology, and the contractor has ownership of key assets required for project performance. HP is the sole provider of this hardware and software and therefore, the only source for its maintenance and support licensing agreements.

Proposal
Staff recommends the purchase of one year of maintenance and support services for server hardware and software from HP at a cost not to exceed $120,000.

Resource Impacts
Sufficient funds are included in the FY 2020-21 Budget.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 9

PROPOSAL: Issue RFP for Cybersecurity Assessment

SYNOPSIS: South Coast AQMD is seeking a vendor to perform a comprehensive cybersecurity assessment that will identify any potential cybersecurity risks and recommend changes to align with industry standards and peer organizations. The Assessment will also provide a roadmap to risk mitigation and cybersecurity program maturity. This action is to issue an RFP to solicit proposals from qualified vendors to conduct this assessment. Funds for this project, not to exceed $100,000, would come from the General Fund Undesignated (Unassigned) Fund Balance.

COMMITTEE: Administrative, February 12, 2021; Recommended for Approval

RECOMMENDED ACTION:
Approve the release of RFP P2021-10 to solicit vendors capable of providing high quality, cost-effective cybersecurity assessment at a cost not to exceed $100,000.

Wayne Nastri
Executive Officer

RMM:MAH:hlp

Background

There are daily challenges to monitor, detect, and respond to evolving cybersecurity risks. To address the challenge of a changing threat landscape and environment, staff recommends a cybersecurity assessment for alignment with industry cybersecurity frameworks and best practices to ensure the availability, integrity and confidentiality of the agency's information systems and data. A comprehensive cybersecurity assessment can identify potential cybersecurity weaknesses, assess threats and identify the current state of cybersecurity maturity level. The assessment will include recommendations to mitigate the impacts of cyberthreats, and protect the information, people and reputation of South Coast AQMD. The assessment will include the following:

- External vulnerability and simulated cyberattack testing;

- Internal vulnerability and simulated cyberattack testing;
- Wireless network vulnerability and simulated cyberattack testing;
- Web application vulnerability and simulated cyberattack testing;
- Application code review;
- System patch review;
- Database security review;
- Backup security review;
- Internet of Things (IoT) security review for devices such sensors;
- Social engineering; and
- Cybersecurity maturity review.

Proposal
This action is to issue RFP P2021-10 to solicit proposals from qualified vendors to provide the most comprehensive and cost-effective cybersecurity assessment.

Outreach
In accordance with South Coast AQMD's Procurement Policy and Procedure, a public notice advertising the RFP 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 South Coast AQMD's own electronic listing of certified minority vendors. Notice of the RFP will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associates, and placed on South Coast AQMD's website (http://www.aqmd.gov) where it can be viewed by making the selection "Grants & Bids."

Bid Evaluation
Proposals received will be evaluated by a diverse, technically qualified panel in accordance with criteria contained in the RFP. The panel will include two IT Managers, two Systems & Programming Supervisors, and one IT Supervisor from South Coast AQMD; and one cybersecurity expert from outside South Coast AQMD.

Resource Impacts
Funds will be allocated from the General Fund Undesignated (Unassigned) Fund Balance on award.

Attachment
RFP P2021-10

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

REQUEST FOR PROPOSALS

Cybersecurity Assessment

P2021-10

South Coast Air Quality Management District (South Coast AQMD) requests proposals for the following purpose according to terms and conditions attached. In the preparation of this Request for Proposals (RFP) the words "Proposer," "Contractor," "Consultant," "Bidder" and "Firm" are used interchangeably.

PURPOSE

The purpose of this Request for Proposals (RFP) is to solicit qualified third-party service providers to perform a penetration testing, and a cybersecurity risk/maturity assessment. This RFP contains the general objective, scope and requirements for the service provider's proposal. The vendor proposal should include all of the items defined in **Section V** and the South Coast AQMD reserves the right to determine the final scope.

Objective and Scope

INDEX - The following are contained in this RFP:

SECTION I: BACKGROUND/INFORMATION

The South Coast Air Quality Management District (South Coast AQMD) is based in Diamond Bar, California. South Coast AQMD began operations in 1977 as a regional governmental agency established by the California Legislature pursuant to the Lewis Air Quality Management Act. The South Coast AQMD is responsible for regulating stationary sources of air pollution in Southern California, such as factories and businesses in the South Coast Air Basin. The area encompasses over 10,000 square miles in the second most populated region of the United States. The South Coast AQMD is a national leader in its efforts to reduce air pollution emissions by operating an extensive network of 41 air quality monitoring stations throughout the region and through their studies on air pollution dispersion models.

The mission of the South Coast AQMD is to clean the air and protect the health of all residents in the South Coast Air Basin through practical and innovative strategies. This mission is pursued through a comprehensive program of planning, regulation, education, enforcement, compliance incentives, technical innovation, and promoting public understanding of air quality issues. This program requires the support of all offices within the South Coast AQMD and demands the use of innovative processes and solutions to achieve their mission.

To embrace the challenge of changing threat landscape and environment, the South Coast AQMD is on a cybersecurity maturity journey for alignment with the industry cybersecurity framework/practices to ensure the availability, integrity and confidentiality of the South Coast AQMD's information systems and data.

The South Coast AQMD has a proprietary in-house data center located in its headquarters in Diamond Bar, CA containing the following:

- Redundant boarder routers and core switches with multiple VLANs.
- Wireless network with over 75 access points for both employees and guests' access
- Voice network with near 1000 end points
- About 300 servers with multiple operating systems
- Over 1000 workstations/laptops with multiple operating systems
- Site-to-site VPN connections to: remote office, cloud environment, and partner network
- Firewalls, web proxy, end-point-security, email security
- Enterprise account management directories

Additional information and Assumptions

- Only the IP addresses or IP address ranges, and applications clearly identified as belonging to the South Coast AQMD will be scanned and/or tested
- The South Coast AQMD will provide a list of any IP addresses or IP address ranges for any hosts/systems/subnets that are not to be scanned or tested in the engagement
- The service provider will work in collaboration with the South Coast AQMD's Point of Contact (PoC) during the entire period of the engagement.
- The service provider will provide a dedicated Point of Contact (PoC) that the South Coast AQMD team can work with.
- Deny of Service (DoS) attack or any activities that would cause business disruption should not be included in the penetration testing. The service provider needs to agree to notify of any portion of the assessment that may result in a disruption (such as, for example, loss of network connectivity and loss of access to applications and network services)
- If during the performance of the penetration testing, the service provider finds any critical/high vulnerabilities that post imminent threat or any indication for past breach detected, the service provider must report those "initial findings" to the South Coast AQMD's Point of Contact(s) upon discovery. The South Coast AQMD will determine whether the service provider should attempt to exploit the vulnerability any further.

- All penetration scanning and testing will be performed during the South Coast AQMD approved timeframes.

SECTION II: CONTACT PERSON:

Questions regarding the content or intent of this RFP or on procedural matters should be addressed to:

Charlene Huang, Information Management
South Coast AQMD
21865 Copley Drive
Diamond Bar, CA 91765-4178
(909) 396-2180
chuang@aqmd.gov

SECTION III: SCHEDULE OF EVENTS

Date	Event
Mar 5, 2021	RFP Released
Mar 24, 2021	Mandatory Bidder's Conference*
April 9, 2021	Proposals Due to South Coast AQMD - **No Later Than 1:00 pm**
April 13, 2021 – April 23, 2020	Proposal Evaluations
Apr 27, 2021	Interviews, if required
May 4, 2021	Approval
June 4, 2021	Anticipated Contract Execution

*Participation in the Bidder's Conference is mandatory. Such participation would assist in notifying potential Bidders of any updates or amendments. The Bidder's Conference will be held via ZOOM conference at 10:00 am on Wednesday, March 24, 2021. Please contact **(Charlene Huang)** at (909) 396-**2180** by close of business on Friday, March 19, 2021 if you plan to attend. The conference link will be shared to the vendors who RSVP'd to attend.

SECTION IV: PARTICIPATION IN THE PROCUREMENT PROCESS

It is the policy of South Coast AQMD to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in South Coast AQMD contracts. Attachment A to this RFP contains definitions and further information.

SECTION V: STATEMENT OF WORK/SCHEDULE OF DELIVERABLES

Statement of Work

This section documents objective and scope of the Cybersecurity Assessment.

Objective:

The South Coast AQMD would like to conduct a comprehensive Cybersecurity Assessment provided by an independent reputable 3rd party provider in the Cybersecurity space. The overall objectives of the assessment include but not limited to the following:

1. Help the South Coast AQMD to gain a better understanding of current cybersecurity posture (vulnerabilities, threats, risks);
2. Help the South Coast AQMD to identity control gaps and perform gap/risk analysis on alignment with the NIST cybersecurity framework;
3. Provide risk based tactical and strategic directions to the South Coast AQMD and build risk-based project roadmap to mature and strengthen the cybersecurity program of the South Coast AQMD.

Scope of Services:

The cybersecurity assessment includes the following components:

1. **External vulnerability and penetration testing:**
    - Identify open source intelligence information that an attacker could leverage in further attacks against the South Coast AQMD (such as email addresses, phone numbers, IP addresses, posted application source code, forum posts with sensitive information, etc.);
    - Identify open ports/services associated with security vulnerabilities and perform active exploit on systems and applications (Note: Exploit should stop at the point of proof of compromise but not causing any business interruption);
2. **Internal vulnerability and penetration testing:**
    - Identify a breadth of attack vectors and vulnerabilities throughout the South Coast AQMD and determine the impact through targeted exploitation
    - Internal IP ranges will be sampled from the following:
        i. Network infrastructure devices (include but not limited to routers, switches, and firewalls)
        ii. Servers and user workstations
        iii. Voice VLAN and IP phones
        iv. Printers
        v. Remote access of air monitor sites
        vi. Cloud access (Azure) ranges through the site-to-site VPN
        vii. Third party connection
        viii. 2nd location (Long Beach office)
3. **Wireless networks (both private and guest)**
4. **Web application vulnerability and penetration testing:**
    - Provide authenticated web application vulnerability scanning and penetration testing (At a minimum, the test should include OWASP Top 10). (6 external facing applications will be selected);

- Identify application security vulnerabilities and perform active exploit through identified vulnerabilities (Note: Exploit should stop at the point of proof of compromise but not causing any business interruption);

5. **Application code review:**
    - Provide manual and/or automated review of selected application source code and identity security weaknesses in the code (3 to 5 applications will be selected);
6. **System patch review:**
    - Provide system patch review on selected systems (30 percent samples from servers, PCs, network devices, etc.) and provide recommendations for remediation.
7. **Database Security Review:**
    - Provide security assessment against database systems, identity security vulnerabilities and provide recommendations for remediation. (4 databases will be selected for review in 3 different flavors)
8. **Backup Security Review:**
    - Provide security assessment of current backup solution, identity security vulnerabilities and provide recommendations for remediation.
9. **IoT Security Review:**
    - Provide security assessment of current air quality monitor sensors, identity security vulnerabilities and provide recommendations for remediation. (1 site will be selected and up to 5 different sensors will be reviewed)
10. **Social Engineering:**
    - Perform social engineering test such as:
        i. Phone based social engineering – Test the IT help desk or end users to determine if they would release sensitive information over the phone or perform activities such as making changes to an account, visiting a "malicious" web site or resetting their password. (If so, how many phone calls)
11. **Cybersecurity maturity:**
    - Leverage the NIST cybersecurity framework to assess the maturity level of the South Coast AQMD in the cybersecurity space including the review of policies and procedures. The assessment should be performed in following the 5 function areas and associated categories.
        i. Identify (ID)
            - Asset Management (ID.AM)
            - Business Environment (ID.BE)
            - Governance (ID.GV)
            - Risk Assessment (ID.RA)
            - Risk Management Strategy (ID.RM)
            - Supply Chain Risk Management (ID.SC)
        ii. Protect (PR)

- Identity Management, Authentication, and Access Control (PR.AC)
- Awareness and Training (PR.AT)
- Data Security (PR.DS)
- Information Protection Process and Procedures (PR.IP)
- Maintenance (PR.MA)
- Protective Technology (PR.PT)

iii. Detect (DE)
- Anomalies and Events (DE.AE)
- Security Continuous Monitoring (DE.CM)
- Detection Processes (DE.DP)

iv. Respond (RS)
- Response Planning (RS.RP)
- Communications (RS.CO)
- Analysis (RS.AN)
- Mitigation (RS.MI)
- Improvements (RS.RP)

v. Recover (RC)
- Recovery Planning (RC.RP)
- Improvements (RC.IM)
- Communications (RC.CO)

12. Provide retest of all critical findings

- A retest is required for all critical findings from item 1 through 5 within the agreed timeline between the service provider and the South Coast AQMD team

Required Deliverables:

1. Executive summary:

- The executive summary should include high level overview of the assessment including the following:
  i. Objective, scope and approach;
  ii. Overall assessment results;
  iii. Overall risk ranking and key areas of risk;
  iv. Current maturity level score card against NIST cybersecurity framework;
  v. Strategic recommendations and key areas of focus for remediation.

2. Detailed report:

- The detailed report should include detail of the assessment including the following:
  i. Assessment methodology;
  ii. Detailed assessment results in a sortable spreadsheet, risk ranking and actionable recommendations for all areas within the assessment scope;
  iii. Detailed score card of current maturity level for each NIST subcategory

3. **Road map:**
    - This should include both tactical and strategic recommendations in a risk-based approach with consideration of business environment, technology, people and process.
        i. Tactical recommendations: This should identify issues that are tactical in nature, simple to implement, and will have a positive impact to overall NIST alignment. Recommendations should be made and presented in a risk-ranked format along with technical, resource and process requirements.
        ii. Strategic Recommendations: This should identify issues that are strategic in nature, complex to implement, and require management decisions to fund, but will have a significant impact to the overall architecture program. Recommendations should be made and presented in a risk-ranked format along with technical, resource and process requirements.
4. **Prioritized project plan:**
    - The project plan is developed to support the road map. At a minimum, the project plan should include the following elements:
        i. Project description
        ii. Priority
        iii. Risk rank
        iv. Supported road map item #
        v. Recommended solution
        vi. Level of complexity to implement
        vii. Budget requirement (should consider all cost including hardware, software/license, labor cost, support/maintenance)
        viii. Resource requirement
        ix. Implement timeline
5. **Presentation deliverable:**
    - The service provider should prepare and deliver an executive-level presentation of the assessment.

Schedule of Deliverables

Date	Event
July 30, 2021	All deliverables due
Aug 5, 2021	Presentation to IM Management
Aug 12, 2021	Presentation to the Executive Management

SECTION VI: REQUIRED QUALIFICATIONS

A. Persons or firms proposing to bid on this proposal must be qualified and experienced in representing and advising governmental agencies and must submit qualifications

demonstrating this ability in penetration testing and cybersecurity risk/maturity assessment.

B. Proposer must submit the following:

1. Summary of years of service experiences in the relevant space;
2. Resumes or similar statement of qualifications of person or persons who may be designated to perform the pen test and/or cybersecurity risk/maturity assessment.
3. List of representative clients;
4. Summary of the methodology/approach of penetration testing and risk/maturity assessment;
5. Sample delivery reports for the required deliverables.
6. Summary of proposer's general qualifications to meet required qualifications and fulfill statement of work, including additional Firm personnel and resources beyond those of the designated persons.

SECTION VII: PROPOSAL SUBMITTAL REQUIREMENTS

Submitted proposals must follow the format outlined below and all requested information must be supplied. Failure to submit proposals in the required format will result in elimination from proposal evaluation. South Coast AQMD may modify the RFP or issue supplementary information or guidelines during the proposal preparation period prior to the due date. Please check our website for updates (http://www.aqmd.gov/grants-bids). The cost for developing the proposal is the responsibility of the Contractor, and shall not be chargeable to South Coast AQMD.

Each proposal must be submitted in three separate volumes:

- Volume I - Technical Proposal
- Volume II - Cost Proposal
- Volume III - Certifications and Representations included in Attachment B to this RFP, must be completed and executed by an authorized official of the Contractor.

A separate cover letter including the name, address, and telephone number of the contractor, and signed by the person or persons authorized to represent the Firm should accompany the proposal submission. Firm contact information as follows should also be included in the cover letter:

1. Address and telephone number of offices in, or nearest to, Diamond Bar, California.

2. Name and title of Firm's representative designated as contact.

A separate Table of Contents should be provided for Volumes I and II.

VOLUME I - TECHNICAL PROPOSAL

DO NOT INCLUDE ANY COST INFORMATION IN THE TECHNICAL VOLUME

Summary (Section A) - State overall approach to meeting the objectives and satisfying the scope of work to be performed, the sequence of activities, and a description of methodology or techniques to be used.

Program Schedule (Section B) - Provide projected milestones or benchmarks for completing the project (to include reports) within the total time allowed.

Project Organization (Section C) - Describe the proposed management structure, program monitoring procedures, and organization of the proposed team. Provide a statement detailing your approach to the project, specifically address the Firm's ability and willingness to commit and maintain staffing to successfully complete the project on the proposed schedule.

Qualifications (Section D) - Describe the technical capabilities of the Firm. Provide references of other similar studies or projects performed during the last five years demonstrating ability to successfully complete the work. Include contact name, title, and telephone number for any references listed. Provide a statement of your Firm's background and related experience in performing similar services for other governmental organizations.

Assigned Personnel (Section E) - Provide the following information about the staff to be assigned to this project:

1. List all key personnel assigned to the project by level, name and location. Provide a resume or similar statement describing the background, qualifications and experience of the lead person and all persons assigned to the project. Substitution of project manager or lead personnel will not be permitted without prior written approval of South Coast AQMD.

2. Provide a spreadsheet of the labor hours proposed for each labor category at the task level.

3. Provide a statement indicating whether or not 90 percent of the work will be performed within the geographical boundaries of South Coast AQMD.

4. Provide a statement of education and training programs provided to, or required of, the staff identified for participation in the project, particularly with reference to management consulting, governmental practices and procedures, and technical matters.

5. Provide a summary of your Firm's general qualifications to meet required qualifications and fulfill statement of work, including additional Firm personnel and resources beyond those who may be assigned to the project.

Subcontractors (Section F) - This project may require expertise in multiple technical areas. List any subcontractors that will be used, identifying functions to be performed by them, their related qualifications and experience and the total number of hours or percentage of time they will spend on the project.

Conflict of Interest (Section G) - Address possible conflicts of interest with other clients affected by actions performed by the Firm on behalf of South Coast AQMD. South Coast AQMD recognizes that prospective Contractors may be performing similar projects for other clients. Include a complete list of such clients for the past three (3) years with the type of work performed and the total number of years performing such tasks for each client. Although the Proposer will not be automatically disqualified by reason of work performed for such clients, South Coast AQMD reserves the right to consider the nature and extent of such work in evaluating the proposal.

Additional Data (Section H) - Provide other essential data that may assist in the evaluation of this proposal.

VOLUME II - COST PROPOSAL

Name and Address - The Cost Proposal must list the name and complete address of the Proposer in the upper left-hand corner.

Cost Proposal – South Coast AQMD anticipates awarding a fixed price contract. Cost must be itemized for each assessment piece and cost information must be provided as listed below:

1. Detail must be provided by the following categories:

   A. Labor – The Cost Proposal must list the fully-burdened hourly rates and the total number of hours estimated for each level of professional and administrative staff to be used to perform the tasks required by this RFP. Costs should be estimated for each of the components of the work plan.

   B. Subcontractor Costs - List subcontractor costs and identify subcontractors by name. Itemize subcontractor charges per hour or per day.

   C. Travel Costs - Indicate amount of travel cost and basis of estimate to include trip destination, purpose of trip, length of trip, airline fare or mileage expense, per diem costs, lodging and car rental.

   D. Other Direct Costs -This category may include such items as postage and mailing expense, printing and reproduction costs, etc. Provide a basis of estimate for these costs.

2. It is the policy of the South Coast AQMD to receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services. South Coast AQMD will give preference, where appropriate, to vendors who certify that they will provide “most favored customer” status to the South Coast AQMD. To receive preference points, Proposer shall certify that South Coast AQMD is receiving “most favored customer” pricing in the Business Status Certifications page of Volume III, Attachment B – Certifications and Representations.

VOLUME III - CERTIFICATIONS AND REPRESENTATIONS (see Attachment B to this RFP)

SECTION VIII: PROPOSAL SUBMISSION

All proposals must be submitted according to specifications set forth in the section above, and this section. Failure to adhere to these specifications may be cause for rejection of the proposal.

Signature - All proposals must be signed by an authorized representative of the Proposer.

Due Date - **All proposals are due no later than 1:00 p.m., April 17, 2021, and should be directed to**:

Procurement Unit
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178
(909) 396-3520

Submittal - Submit five (5) complete copies of the proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the Proposer and the words "Request for Proposals**. P2021-10**"

Late bids/proposals will not be accepted under any circumstances.

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

- It is not prepared in the format described, or
- It is signed by an individual not authorized to represent the Firm.

Modification or Withdrawal - Once submitted, proposals cannot be altered without the prior written consent of South Coast AQMD. 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 IX: PROPOSAL EVALUATION/CONTRACTOR SELECTION CRITERIA

A. Proposals will be evaluated by a panel of three to five South Coast AQMD staff members familiar with the subject matter of the project. The panel shall be appointed by the Executive Officer or his designee. In addition, the evaluation panel may include such outside public sector or academic community expertise as deemed desirable by the Executive Officer. The panel will make a recommendation to the Executive Officer and/or the Governing Board of South Coast AQMD for final selection of a contractor and negotiation of a contract.

B. Each member of the evaluation panel shall be accorded equal weight in his or her rating of proposals. The evaluation panel members shall evaluate the proposals according to the specified criteria and numerical weightings set forth below.

1. Proposal Evaluation Criteria

R&D Projects Requiring Technical or Scientific Expertise, or Special Projects Requiring Unique Knowledge or Abilities

Understanding the Problem	20
Technical/Management Approach	20
Contractor Qualifications	20
Previous Experience on Similar Projects	10
Cost	30
TOTAL	100

Additional Points

Small Business or Small Business Joint Venture	10
DVBE or DVBE Joint Venture	10
Use of DVBE or Small Business Subcontractors	7
Zero or Near-Zero Emission Vehicle Business	5
Local Business (Non-Federally Funded Projects Only)	5
Off-Peak Hours Delivery Business	2
Most Favored Customer	2

The cumulative points awarded for small business, DVBE, use of small business or DVBE subcontractors, Zero or Near-Zero emission vehicle business, local business, and off-peak hours delivery business shall not exceed 15 points. Most Favored Customer status incentive points shall be added, as applicable for a total of 17 points.

Self-Certification for Additional Points

The award of these additional points shall be contingent upon Proposer completing the Self-Certification section of Attachment B – Certifications and Representations and/or inclusion of a statement in the proposal self-certifying that Proposer qualifies for additional points as detailed above.

2. To receive additional points in the evaluation process for the categories of Small Business or Small Business Joint Venture, DVBE or DVBE Joint Venture or Local Business (for non-federally funded projects), the proposer must submit a self-certification at the time of proposal submission certifying that the proposer meets the requirements set forth in Attachments A and B. To receive points for the use of DVBE and/or Small Business subcontractors, at least 25 percent of the total contract value must be subcontracted to DVBEs and/or Small Businesses. To receive points as a Zero or Near-Zero Emission Vehicle Business, the proposer must demonstrate to the Executive Officer, or designee, that supplies and materials delivered to South Coast AQMD are delivered in vehicles that operate on clean-fuels. To receive points as a Local Business, the proposer must affirm that it has an ongoing business within the South Coast AQMD at the time of bid/proposal submittal and that 90 percent of the work related to the contract will be performed within the South Coast AQMD. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points. Federally funded projects are not eligible for local business incentive points. To receive points as an Off-Peak Hours Delivery Business, the proposer must submit, at proposal submission, certification of its commitment to delivering supplies and materials to South Coast AQMD between the hours of 10:00 a.m. and 3:00 p.m. To receive points for Most Favored Customer status, the proposer must submit, at proposal submission, certification of its commitment to provide most favored customer status to the South Coast AQMD. The cumulative points awarded for Small Business, DVBE, use of Small Business or DVBE Subcontractors, Local Business, Zero or Near-Zero Emission Vehicle Business, Off-Peak Hour Delivery Business and Most Favored Customer shall not exceed 17 points.

3. For procurement of Research and Development (R & D) projects or projects requiring technical or scientific expertise or special projects requiring unique knowledge and abilities, technical factors including past experience shall be weighted at 70 points and cost shall be weighted at 30 points. A proposal must receive at least 56 out of 70 points on R & D projects and projects requiring technical or scientific expertise or special projects requiring unique knowledge and abilities, in order to be deemed qualified for award.

4. The lowest cost proposal will be awarded the maximum cost points available and all other cost proposals will receive points on a prorated basis. For example, if the lowest cost proposal is $1,000 and the maximum points available are 30 points, this proposal would receive the full 30 points. If the next lowest cost proposal is $1,100 it would receive 27 points reflecting the fact that it is 10% higher than the lowest cost (90 percent of 30 points = 27 points).

C. During the selection process the evaluation panel may wish to interview some proposers for clarification purposes only. No new material will be permitted at this time. Additional information provided during the bid review process is limited to clarification by the Proposer of information presented in his/her proposal, upon request by South Coast AQMD.

D. The Executive Officer or Governing Board may award the contract to a Proposer other than the Proposer receiving the highest rating in the event the Governing Board determines that another Proposer from among those technically qualified would provide the best value to South Coast AQMD considering cost and technical factors. The determination shall be based solely on the Evaluation Criteria contained in the Request for Proposal (RFP), on evidence provided in the proposal and on any other evidence provided during the bid review process.

E. Selection will be made based on the above-described criteria and rating factors. The selection will be made by and is subject to Executive Officer or Governing Board approval. Proposers may be notified of the results by letter.

F. The Governing Board has approved a Bid Protest Procedure which provides a process for a Bidder or prospective Bidder to submit a written protest to South Coast AQMD Procurement Manager in recognition of two types of protests: Protest Regarding Solicitation and Protest Regarding Award of a Contract. Copies of the Bid Protest Policy can be secured through a request to South Coast AQMD Procurement Department.

G. The Executive Officer or Governing Board may award contracts to more than one proposer if in (his or their) sole judgment the purposes of the (contract or award) would best be served by selecting multiple proposers.

H. If additional funds become available, the Executive Officer or Governing Board may increase the amount awarded. The Executive Officer or Governing Board may also select additional proposers for a grant or contract if additional funds become available.

I. Disposition of Proposals – Pursuant to South Coast AQMD's Procurement Policy and Procedure, South Coast AQMD reserves the right to reject any or all proposals. All proposals become the property of South Coast AQMD, and are subject to the California Public Records Act. One copy of the proposal shall be retained for South Coast AQMD files. Additional copies and materials will be returned only if requested and at the proposer's expense.

J. If proposal submittal is for a Public Works project as defined by State of California Labor Code Section 1720, Proposer is required to include Contractor Registration No. in Attachment B. Proposal submittal will be deemed as non-responsive and Bidder may be disqualified if Contractor Registration No. is not included in Attachment B. Proposer is alerted to changes to California Prevailing Wage compliance requirements as defined in Senate Bill 854 (Stat. 2014, Chapter 28), and California Labor Code Sections 1770, 1771 and 1725.

SECTION XI: SAMPLE CONTRACT

A sample contract to carry out the work described in this RFP is available on South Coast AQMD's website at http://www.aqmd.gov/grants-bids or upon request from the RFP Contact Person (Section II).

ATTACHMENT A

PARTICIPATION IN THE PROCUREMENT PROCESS

A. It is the policy of South Coast Air Quality Management District (South Coast AQMD) to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in South Coast AQMD contracts.

B. Definitions:

The definition of minority, women or disadvantaged business enterprises set forth below is included for purposes of determining compliance with the affirmative steps requirement described in Paragraph G below on procurements funded in whole or in part with federal grant funds which involve the use of subcontractors. The definition provided for disabled veteran business enterprise, local business, small business enterprise, Zero or Near-Zero emission vehicle business and off-peak hours delivery business are provided for purposes of determining eligibility for point or cost considerations in the evaluation process.

1. "Women business enterprise" (WBE) as used in this policy means a business enterprise that meets all of the following criteria:

   a. a business that 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 or women.

   b. a business whose management and daily business operations are controlled by one or more women.

   c. a business which is a sole proprietorship, corporation, or partnership 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-based business.

2. "Disabled veteran" as used in this policy is a United States military, naval, or air service veteran with at least 10 percent service-connected disability who is a resident of California.

3. "Disabled veteran business enterprise" (DVBE) as used in this policy means a business enterprise that meets all of the following criteria:

   a. is a sole proprietorship or partnership of which at least 51 percent is owned by one or more disabled veterans or, in the case of a publicly owned business, at least 51 percent of its 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.

   b. 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.

c. is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

4. "Local business" as used in this policy means a company that has an ongoing business within geographical boundaries of South Coast AQMD at the time of bid or proposal submittal and performs 90 percent of the work related to the contract within the geographical boundaries of South Coast AQMD and satisfies the requirements of subparagraph H below. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.

5. “Small business” as used in this policy 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 and 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

6. "Joint ventures" as defined in this policy pertaining to certification means that one party to the joint venture is a DVBE or small business and owns at least 51 percent of the joint venture.

7. "Zero or Near-Zero Emission Vehicle Business" as used in this policy means a company or contractor that uses Zero or Near-Zero emission vehicles in conducting deliveries to South Coast AQMD. Zero or Near-Zero emission vehicles include vehicles powered by electric, compressed natural gas (CNG), liquefied natural gas (LNG), liquefied petroleum gas (LPG), ethanol, methanol and hydrogen and are certified to 90% or lower of the existing standard.

8. “Off-Peak Hours Delivery Business” as used in this policy means a company or contractor that commits to conducting deliveries to South Coast AQMD during off-peak traffic hours defined as between 10:00 a.m. and 3:00 p.m.

9. “Benefits Incentive Business” as used in this policy means a company or contractor that provides janitorial, security guard or landscaping services to South Coast AQMD and

commits to providing employee health benefits (as defined below in Section VIII.D.2.d) for full time workers with affordable deductible and co-payment terms.

10. “Minority Business Enterprise” as used in this policy means a business that is at least 51percent owned by one or more minority person(s), or in the case of any business whose stock is publicly held, at least 51percent of the stock is owned by one or more or minority persons.

    a. a business whose management and daily business operations are controlled by one or more minority persons.

    b. a business which is a sole proprietorship, corporation, or partnership 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-based business.

    c. "Minority person" for purposes of this policy, means a Black American, Hispanic American, Native-American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian (including a person whose origins are from India, Pakistan, and 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, and Taiwan).

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

12. ”Disadvantaged Business Enterprise” as used in this policy means a business that is an entity owned and/or controlled by a socially and economically disadvantaged individual(s) as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. 7601 note) (10 percent statute), and Public Law 102-389 (42 U.S.C. 4370d)(8 percent statute), respectively;
    a Small Business Enterprise (SBE);
    a Small Business in a Rural Area (SBRA);
    a Labor Surplus Area Firm (LSAF); or
    a Historically Underutilized Business (HUB) Zone Small Business Concern, or a concern under a successor program.

C. Under Request for Quotations (RFQ), DVBEs, DVBE business joint ventures, small businesses, and small business joint ventures shall be granted a preference in an amount equal to 5% of the lowest cost responsive bid. Zero or Near-Zero Emission Vehicle Businesses shall be granted a preference in an amount equal to 5 percent of the lowest cost responsive bid. Off-Peak Hours Delivery Businesses shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid. Local businesses (if the procurement is not funded in whole or in part by federal grant funds) shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid. Businesses offering Most Favored Customer status shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid.

D. Under Request for Proposals, DVBEs, DVBE joint ventures, small businesses, and small business joint ventures shall be awarded ten (10) points in the evaluation process. A non-

DVBE or large business shall receive seven (7) points for subcontracting at least twenty-five (25 percent) of the total contract value to a DVBE and/or small business. Zero or Near-Zero Emission Vehicle Businesses shall be awarded five (5) points in the evaluation process. On procurements which are not funded in whole or in part by federal grant funds local businesses shall receive five (5) points. Off-Peak Hours Delivery Businesses shall be awarded two (2) points in the evaluation process. Businesses offering Most Favored Customer status shall be awarded two (2) points in the evaluation process.

E. South Coast AQMD will ensure that discrimination in the award and performance of contracts does not occur on the basis of race, color, sex, national origin, marital status, sexual preference, creed, ancestry, medical condition, or retaliation for having filed a discrimination complaint in the performance of South Coast AQMD contractual obligations.

F. South Coast AQMD requires Contractor to be in compliance with all state and federal laws and regulations with respect to its employees throughout the term of any awarded contract, including state minimum wage laws and OSHA requirements.

G. When contracts are funded in whole or in part by federal funds, and if subcontracts are to be let, the Contractor must comply with the following, evidencing a good faith effort to solicit disadvantaged businesses. Contractor shall submit a certification signed by an authorized official affirming its status as a MBE or WBE, as applicable, at the time of contract execution. South Coast AQMD reserves the right to request documentation demonstrating compliance with the following good faith efforts prior to contract execution.

    1. Ensure Disadvantaged Business Enterprises (DBEs) are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

    2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

    3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and Local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

    4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

    5. Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

    6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.

H. To the extent that any conflict exists between this policy and any requirements imposed by federal and state law relating to participation in a contract by a certified MBE/WBE/DVBE as a condition of receipt of federal or state funds, the federal or state requirements shall prevail.

I. When contracts are not funded in whole or in part by federal grant funds, a local business preference will be awarded. For such contracts that involve the purchase of commercial off-the-shelf products, local business preference will be given to suppliers or distributors of commercial off-the-shelf products who maintain an ongoing business within the geographical boundaries of South Coast AQMD. However, if the subject matter of the RFP or RFQ calls for the fabrication or manufacture of custom products, only companies performing 90 percent of the manufacturing or fabrication effort within the geographical boundaries of South Coast AQMD shall be entitled to the local business preference. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.

J. In compliance with federal fair share requirements set forth in 40 CFR Part 33, South Coast AQMD shall establish a fair share goal annually for expenditures with federal funds covered by its procurement policy.

ATTACHMENT B

South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Business Information Request

Dear South Coast AQMD Contractor/Supplier:

South Coast Air Quality Management District (South Coast AQMD) 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 not be able to establish you as a vendor. This will delay any payments and would still 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,

Sujata Jain
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

REV 8/19

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

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 South Coast AQMD,_____(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 **for contracts or purchase orders funded in whole 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.

Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with South Coast AQMD 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. _____. 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 South Coast AQMD at the time of bid application.
- performs 90 percent of the work within South Coast AQMD'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 South Coast AQMD 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. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, 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 for Part II, later.

Sign Here | **Signature of U.S. person** ▶ | **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

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, *later.*

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

4. 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*, later, for further information.

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 Pub. 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.

3. 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 24% 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,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. 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

5. 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*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

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*, later, 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 (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a 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 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 on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on 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

[1] See 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. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

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.

If you are a single-member LLC that is disregarded as an entity separate from its owner, 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 *What Name and Number To Give the Requester*, later, 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 ITIN, 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. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

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 item 1, 4, or 5 below indicates 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), ABLE accounts (under section 529A), 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	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. 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[1] The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. 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:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. 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
15. 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

[1] 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.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You 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,* earlier.

*Note: The 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 Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic 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 report them at *www.ftc.gov/complaint*. You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* 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.

TAXABLE YEAR

CALIFORNIA FO

2019 Withholding Exemption Certificate 590

The payee completes this form and submits it to the withholding agent. The withholding agent keeps this form with their records.

Withholding Agent Information

Name

Payee Information

Name ☐ SSN or ITIN ☐ FEIN ☐ CA Corp no. ☐ CA SOS fil

Address (apt./ste., room, PO box, or PMB no.)

City (If you have a foreign address, see instructions.) State ZIP code

Exemption Reason

Check only one box.

By checking the appropriate box below, the payee certifies the reason for the exemption from the California income tax withholding requirements 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 nonresident at any time, I will promptly notify the withholding agent. See instructions for General information D, Definitions.

☐ **Corporations:**
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to have a permanent place of business in California or ceases to do any of the above, I will promptly not the withholding agent. See instructions for General information D, Definitions.

☐ **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 registered with th California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partners or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liabil partnership (LLP) is treated like any other partnership.

☐ **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 noti the withholding agent. Individuals cannot be tax-exempt entities.

☐ **Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit-Sharing Plans:**
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.

☐ **California Trusts:**
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly 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 the time of death. The estate will file a California fiduciary tax return.

☐ **Nonmilitary Spouse of a Military Servicemember:**
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General information E, MSRRA.

CERTIFICATE OF PAYEE: Payee must complete and sign below.

To learn about your privacy rights, how we may use your information, and the consequences for not providing the requested informat go to **ftb.ca.gov/forms** and search for **1131**. To request this notice by mail, call 800.852.5711.

Under penalties of perjury, I declare that I have examined the information on this form, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. I further declare under penalties of perjury th If the facts upon which this form are based change, I will promptly notify the withholding agent.

Type or print payee's name and title _____ Telephone (____)_____

Payee's signature ▶ _____ Date _____

7061193 Form 590 2018

2017 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 more information, 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 the real estate withholding requirement.

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 exemption certificate, the withholding agent may accept a letter from the payee as a substitute explaining why they are 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 (TIN). The withholding agent must retain a copy of the certificate or substitute for at least five years after the last payment to which the certificate applies, and provide it upon request to the FTB.

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 nonwage 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 it has qualified through the CA SOS to transact intrastate business. 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 TIN and check the appropriate TIN box.

You must provide a valid 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 – Follow the country's practice for entering the city, county, province, state, country, and postal code, as applicable, in the appropriate boxes. **Do not** abbreviate the country name.

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

Withholding Agent Instructions

Do not send this form to the FTB. The withholding agent retains this form for a minimum of five years or until the payee's status changes, and must provide this form to the FTB upon request.

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

Website:	For more information go to **ftb.ca.gov** and search for **nonwage**. **MyFTB** offers secure online tax account information and services. For more information and to register, go to **ftb.ca.gov** and search for **myftb**.
Telephone:	**888**.792.4900 or 916.845.4900, Withholding Services and Compliance phone service
Fax:	916.845.9512
Mail:	WITHHOLDING SERVICES AND COMPLIANCE MS F182 FRANCHISE TAX BOARD PO BOX 942867 SACRAMENTO CA 94267-0651

For questions unrelated to withholding, or to download, view, and print California tax forms and publications, 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
TTY/TDD:	800.822.6268 para personas con discapacidades auditivas o de habla

Certification Regarding
Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property:

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

_____

Typed Name & Title of Authorized Representative

_____

Signature of Authorized Representative Date

❑ I am unable to certify to the above statements. My explanation is attached.

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 (South Coast AQMD) 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 South Coast AQMD 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 South Coast AQMD; 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, South Coast AQMD 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 South Coast AQMD Governing Board Members can be found at South Coast AQMD website (www.aqmd.gov). The list of current MSRC members/alternates can be found at the MSRC website (http://www.cleantransportationfunding.org).

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) Parent subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.

(2) Otherwise related business entity. Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one 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 • www.aqmd.gov

Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

- ☐ Individual (Employee, Governing Board Member)
- ☐ Vendor/Contractor
- ☐ 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 Number

City	State	Zip	Country

Taxpayer ID Number	Telephone Number	Email Address

Authorization

1. I authorize South Coast Air Quality Management District (South Coast AQMD) 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 South Coast AQMD 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 South Coast AQMD for distribution. This will delay my payment.
2. This authorization remains in effect until South Coast AQMD receives written notification of changes or cancellation from you.
3. I hereby release and hold harmless South Coast AQMD 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.

To be Completed by your Bank

Staple Voided Check Here			
	Name of Bank/Institution		
	Account Holder Name(s)		
	☐ Saving ☐ Checking	Account Number	Routing Number
	Bank Representative Printed Name	Bank Representative Signature	Date
	ACCOUNT HOLDER SIGNATURE:		Date

For South Coast AQMD Use Only Input By _____ Date _____

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 10

PROPOSAL: Add Positions to FY 2020-21 Budget to Address Operational Needs

SYNOPSIS: This item is to amend the FY 2020-21 Budget to add a Senior Public Affairs Manager position and a Secretary position in the Legislative, Public Affairs, and Media department to administer its AB617 Outreach program, and provide support to other environmental justice programs. This item is also to add a Senior Administrative Secretary to the FY 2020-21 Budget to provide administrative support for the newly appointed Deputy Executive Officer for Diversity, Equity and Inclusion. Funding for these positions are available in the FY 2020-21 Budget and will be requested in future budgets.

COMMITTEE: Administrative, February 12, 2021; Recommended for Approval

RECOMMENDED ACTION:
Amend the FY 2020-21 Budget to add a Senior Public Affairs Manager position and a Secretary position in the Legislative, Public Affairs, and Media department, and a Senior Administrative Secretary position to the Executive Office to report to the Deputy Executive Officer for Diversity, Equity and Inclusion.

Wayne Nastri
Executive Officer

AJO:mm

Background
The Legislative, Public Affairs, and Media (LPAM) department is responsible for legislation, environmental justice, outreach and education, small business assistance, and media activities. LPAM also plays a substantial role in South Coast AQMD's AB 617 program, which focuses on addressing local air pollution in environmental justice (EJ) communities. These responsibilities include outreach, education, and communication with residents, businesses, nonprofit organizations and government

agencies in these communities. Due to an increase in AB 617 communities designated in South Coast AQMD jurisdiction, the department has identified the need for a senior management position to focus on implementation of LPAM's responsibilities in the program. This position will also provide support to other South Coast AQMD EJ programs, such as events and advisory groups.

In October 2020, the Board created an executive level position to drive engagement, strategy, execution, and accountability for all South Coast AQMD diversity and inclusion policies and initiatives. The Deputy Executive Officer/Diversity, Equity and Inclusion Officer (DEIO) reports directly to the Executive Officer and works closely with the Chief Operating Officer, Executive Council, and each department to develop and implement policies and programs to enhance equity, diversity and inclusion within the organization and in the community. In January 2021, Anissa Heard-Johnson was appointed to the DEIO position.

Proposal

This item is to add a Senior Public Affairs Manager position and a Secretary position in LPAM. The Senior Public Affairs Manager will manage and help oversee the day-to-day administration of LPAM's role in the AB 617 program. This responsibility includes providing outreach and education to residents and businesses, and working with governmental agencies on furthering the goals of the communities. This position will also assist the department's DEO to develop strategic plans and objectives for AB 617 and other environmental justice programs at South Coast AQMD, as well as monitor and evaluate progress toward established goals. To provide administrative support to the Senior Public Affairs Manager, and the department as a whole, a Secretary position is also being proposed.

This item also requests that a Senior Administrative Secretary position be added to the Executive Office. The DEIO is currently conducting an assessment of needs for the agency, as well as for her office. The Senior Administrative Secretary is a confidential secretary position that reports to members of executive management, performing a variety of administrative duties, complex and highly responsible clerical work, and interpretation of policy and administrative regulations. Adding this position to report to the DEIO will bring effectiveness and efficiency to this critical policy and program function.

Resource Impacts

Funding to add these positions is available in the FY 2020-21 Budget and will be requested in future budgets.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 11

PROPOSAL: Approve Funds for Additional Batteries for the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program

SYNOPSIS: In October 2017, the Board recognized funds from U.S. EPA's 2016 Targeted Air Shed Grant Program for the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program. Due to the continued high demand, staff is requesting approval for the use of $50,000 from the Rule 2202 AQIP Special Revenue Fund (27) to provide a 75 percent discount for additional batteries for equipment funded under the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Approve the use of $50,000 from the Rule 2202 AQIP Special Revenue Fund (27) to provide a 75 percent discount for additional batteries for equipment funded under the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program.

Wayne Nastri
Executive Officer

MMM:WS

Background
The Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program replaces old gasoline- or diesel-powered commercial lawn and garden equipment with zero emission, battery-electric technology. A variety of makes and models of commercial-grade electric lawn and garden equipment are offered, including handheld trimmers, chainsaws, pruners, backpack and handheld blowers, and lawnmowers including ride-on, stand-on and walk-behind mowers. Local governments, school districts, nonprofit organizations, and commercial gardeners and landscapers can

participate. This program requires dismantling of the old lawn and garden equipment for the replacement.

In October 2017, the Board recognized $2,477,250 from U.S. EPA's 2016 Targeted Air Shed Grant Program for the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program. Subsequently, in April 2018, the Board approved additional funding of $628,077 from Rule 2202 AQIP Special Revenue Fund (27) and execution of contracts with six qualified manufacturers and suppliers of zero emission commercial lawn and garden equipment. In October 2019, the Board further approved the transfer of $750,000 from Rule 1111 AQIP Special Revenue Fund (27) to provide a Plus Up Discount of an additional 25 percent for a total of 75 percent reduction in price for eligible lawn and garden equipment. Due to the popularity and high demand for the Plus Up Discount, in January 2021, the Board approved the transfer of an additional $350,000 from Rule 1111 AQIP Special Revenue Fund (27) to provide additional Plus Up Discount funds.

Since the inception, the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program has replaced approximately 4,800 old gasoline- or diesel-powered commercial lawn and garden equipment. This program continues to get a high level of participation and most recently, staff has recognized an increased demand for the funding of rechargeable batteries for equipment funded under the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program.

Proposal

Staff is proposing to utilize $50,000 from the Rule 2202 AQIP Special Revenue Fund (27) to continue to reduce the cost by 75 percent for rechargeable batteries for equipment funded under the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program. Staff estimates this would provide sufficient funding for approximately 165 additional batteries. In order to provide greater benefit for most gardeners, staff is proposing to limit the number of additional batteries to three per piece of equipment.

Staff will monitor the demand for additional batteries and available funding and report to the Technology Committee no later than six months from Board approval of these funds.

Benefits to South Coast AQMD

The program's primary objective is to reduce emissions of harmful criteria air pollutants by replacing gasoline- or diesel-powered lawn and garden equipment with zero emissions equipment, prioritizing those replacements to the extent possible in disadvantaged communities within South Coast AQMD's jurisdiction. Since the inception of the Commercial Electric Lawn and Garden Equipment Incentive and Exchange Program, South Coast AQMD has replaced over 4,800 lawn and garden

equipment resulting in emission reductions of approximately 43 tons/year of ROG and 1.6 tons/year of NOx. The associated cost-effectiveness for ROG and NOx is approximately $104,000/ton and $1.1 million/ton, respectively.

Resource Impacts
Sufficient funding is available in Rule 2202 AQIP Special Revenue Fund (27) and total expenditures will not exceed $50,000 from Fund (27).

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 12

PROPOSAL: Annual Meeting of the Health Effects of Air Pollution Foundation

SYNOPSIS: This item is to conduct the annual meeting of the Health Effects of 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 ACTIONS:

1. Receive and file the annual report and ratify the Foundation's disbursements described in the annual report.

Wayne Nastri
Executive Officer

BTG:RL:LAL

Background

In February 2003, the South Coast AQMD Board directed staff to establish the Brain Tumor and Air Pollution Foundation to implement an initiative by the Board Chairman to fund research into the potential connections between air pollution and brain cancer. After years of supporting research related to the impacts of air pollution on brain tumors, in March 2017 the Board changed the Foundation's name to the Health Effects of Air Pollution Foundation and expanded the Foundation's mission to support research on the incidence, detection, and causes and cures of various health conditions that may be caused or aggravated by air pollution. To date, the Foundation has received contributions of almost $9 million and has funded studies with leading medical and public health researchers in Southern California.

Directors and Officers

The Directors of the Foundation are:	Ben Benoit, Chairman Dr. William A. Burke, Vice Chairman Dr. Clark E. Parker, Sr. Michael Cacciotti
The Foundation's staff is:	Wayne Nastri, Chief Executive Officer Denise Whitcher, Secretary Sujata Jain, Treasurer Susanna Leung, Assistant Treasurer

Report on the Foundation's Activities

Current Research Projects

The following four research projects in progress that are currently being funded by the Foundation:

- "Do Changes in Amount and Composition of Ambient PM Influence Induction or Exacerbation of Brain and Lung Tumors?" (HEAPF012)
  Principal Investigator: Dr. Arthur Cho (University of California, Los Angeles)
  Approved Funding: $979,182
- "Impacts of Ambient Air Pollution on the Risk and Survival of Breast Cancer in Los Angeles County: The Multiethnic Cohort Study" (HEAPF014)
  Principal Investigator: Dr. Anna Wu (University of Southern California)
  Approved Funding: $804,189
- "Ameliorating Alzheimer's disease by targeting miRNAs in the brain to normalize synthesis of extracellular matrix and ribosomal proteins" (HEAPF015)
  Principal Investigator: Dr. Keith Black (Cedars-Sinai Medical Center)
  Approved Funding: $2,250,000
- "Adverse Health Effects of Volatile Organic Compounds" (HEAPF016)
  Principal Investigator: Dr. Art Cho (University of California, Los Angeles)
  Approved Funding: $471,000

Financial Report

The Foundation's fiscal year ended June 30, 2020. Financial statements were prepared by staff and audited by BCA Watson Rice, LLP (Auditor). Total expenses for the fiscal year were $1,016,029 and included grant ($1,014,819), audit fees ($1,200) and other fees/taxes ($10). 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 December 31, 2020, the Foundation had a cash balance of $3,747,852. Following is an accounting of the Foundation's operations since its inception (7/23/03):

Revenue from Operations	
Contributions	$12,472,568
Interest Income	47,157
Total Revenue from Operations	$12,519,725
Operating Expenses	
Grants	
-Cedars-Sinai	$6,785,607
-UCLA	898,258
-USC	1,065,169
Corporation Filing Costs	1,755
Bank charges	598
Professional fees-audit	20,487
Total Operating Expenses	$8,771,874
Cash Balance	$3,747,852

Plans for the Upcoming Year

The Foundation will continue monitoring the progress of the existing research projects and will provide an update to the Board when the projects have final results to report.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 13

REPORT: Legislative, Public Affairs and Media Report

SYNOPSIS: This report highlights the January 2021 outreach activities of the Legislative, Public Affairs and Media Office, which includes Major Events, Community Events/Public Meetings, Environmental Justice Update, Speakers Bureau/Visitor Services, Communications Center, Public Information Center, Business Assistance, Media Relations, and Outreach to Community Groups and Federal, State and Local Governments.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

DJA:NM:LTO:KH:DM:kv:lam:ar

BACKGROUND

This report summarizes the activities of the Legislative, Public Affairs and Media Office for January. The report includes: Major Events; Community Events/Public Meetings; Environmental Justice Update; Speakers Bureau/Visitor Services; Communications Center; Public Information Center; Business Assistance; Media Relations; and Outreach to Community Groups and Governments.

MAJOR EVENTS (HOSTED AND SPONSORED)

Eighth Annual "Dr. Martin Luther King Jr. Day of Service"

Staff hosted South Coast AQMD's Eighth Annual Dr. Martin Luther King Jr. Day of Service "The Dream Continues: Working Together to Clean the Air," on January 16. The event was attended by more than 300 participants virtually on Zoom and Facebook Live, including members of the public, community groups, elected officials and other special guests.

COMMUNITY EVENTS/PUBLIC MEETINGS

Each year, South Coast AQMD staff engage with thousands of residents and stakeholders, providing valuable information about the agency, incentive programs, and ways individuals can help reduce air pollution through events and meetings sponsored solely by South Coast AQMD 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;
- South Coast AQMD incentive programs;
- Ways to participate in South Coast AQMD's rules and policy development; and,
- Assistance in resolving air pollution-related problems.

South Coast AQMD staff attended and/or provided information and updates at the following January events and meetings:

South Pasadena Chamber of Commerce Legislative Affairs Committee

Staff represented South Coast AQMD at the virtual South Pasadena Chamber of Commerce Legislative Affairs Committee on January 13 to provide updates on current funding opportunities, including the Volkswagen Settlement. Staff also shared California Energy Commission's (CEC) announcement to invest $115 million to expand the State's hydrogen fueling infrastructure.

San Fernando Valley Council of Governments

Staff participated in the San Fernando Valley Council of Governments virtual meeting on January 20. Staff provided information on South Coast AQMD's Emergency Order related to crematoriums, Proposition 1B Goods Movement Emission Reduction program, and Volkswagen Light Duty Electric Vehicle Infrastructure opportunities.

San Gabriel Valley City Managers' Association

Staff attended the San Gabriel Valley City Managers' Association virtual meeting on January 20. Staff announced South Coast AQMD's Emergency Order related to crematorium operations. There were approximately 45 city managers and others in attendance.

Mountain Transit Board

Staff participated in the virtual Mountain Transit Board Meeting on January 20 to present an update on South Coast AQMD programs and the CEC announcement to

invest $115 million in hydrogen fueling infrastructure. The meeting was attended by elected officials, community members and business representatives.

Western Riverside County Clean Cities Coalition
Staff attended the virtual quarterly Western Riverside County Clean Cities Coalition meeting on January 27. Staff provided information on South Coast AQMD programs and current incentives for mobile sources including, Proposition 1B Goods Movement Emission Reduction program and Volkswagen Light Duty Electric Vehicle Infrastructure opportunities.

Orange County Council of Governments (OCCOG)
On January 28, staff supported Council Member Rodriguez during the virtual OCCOG Board meeting and presented updates on South Coast AQMD programs. Presentations included an overview of the AB 2766 Subvention Fund Annual Report and Check Before You Burn program.

ENVIRONMENTAL JUSTICE UPDATE
The following are key environmental justice (EJ) related activities in which staff participated during January. These events and meetings involve communities affected disproportionately from adverse air quality impacts.

South LA Climate Commons Celebration and Report Meeting
Staff attended a virtual meeting on January 13 hosted by Strategic Concepts in Organizing Policy Education and community partners on the "South LA Climate Commons." The South LA Climate Commons is a yearlong participatory planning process designed to strengthen community climate resilience through a collaborative process. There were approximately 105 attendees.

Ask the Scientists: EJ Conversation for Kids Meeting
Staff participated in a virtual meeting hosted by the Academy of Natural Sciences at Drexel University on January 16. Children ages 8-11 led a conversation about EJ through a question and answer session with scientists.

Riverside County Health Coalition General Membership Meeting
Staff participated in the virtual quarterly Riverside County Health Coalition general membership meeting on January 20, with approximately 90 attendees. The meeting focused on the COVID-19 vaccine distribution plan for Riverside County. Breakout sessions were held to facilitate small group discussions on public messaging to communities.

Vision 2022: Climate and Clean Air Zoomposium
Staff participated in a webinar on January 21, entitled, "Vision 2022: Climate and Clean Air Zoomposium, #3," hosted by Climate & Clean Air Initiative and co-presented by

Move CA and the San Francisco Bay Area Planning and Urban Research Association. Panelists discussed what is needed from the transportation sector to achieve California's climate and air quality goals.

World Environmental Education Day Webinar
Staff attended a webinar hosted by EARTHDAY.ORG to observe World Environmental Education Day on January 26. Panelists discussed interdisciplinary educational opportunities for environment and climate change issues. There was an emphasis on the use of civic engagement, to inspire students to act in support of environmental causes for their community and globally.

City of Riverside
Staff attended a virtual workshop on January 27 hosted by the City of Riverside on housing, public safety, and EJ policies. Presentations focused on the status of the current economy, zoning, and the need to evaluate equitable land-use options for housing. Additionally, there was discussion on the City's General Plan.

AB 617 UPDATE
The following are key AB 617 related activities in which staff participated during January. These events, workshops and meetings involve AB 617 communities to support the Community Steering Committees (CSC), Community Air Monitoring Plans (CAMPs) and Community Emissions Reduction Plans (CERPs).

"No Idling" Signs in AB 617 Communities
Staff met virtually with representatives from CARB and Los Angeles Sanitation and Environment on January 21. The discussion focused on strategies and processes for installing "No Idling" signs in AB 617 communities.

San Diego Air Pollution Control District (SDAPCD)
Staff met virtually on January 12 with SDAPCD to discuss the AB 617 CSC structure in Portside, San Diego and to share CERP development experiences. The meeting served as a briefing for SDAPCD's upcoming presentation at South Coast AQMD's AB 617 Year 3 community kick-off meeting.

AB 617 South LA (SLA) Year 3 Community Meeting
Staff held a virtual AB 617 kick-off meeting on January 14 for SLA with approximately 90 attendees. Staff introduced South Coast AQMD, presented a general overview of the AB 617 program, summarized the process to develop a CERP and CAMP, explained the process to establish a CSC, and identified potential models for the CSC structure. CARB staff presented an overview of their role in the AB 617 program. CSC members from Year 1 AB 617 communities shared their experiences with the program. Meeting participants inquired about CSC membership and requested that some industries not be

allowed on the CSC. They also inquired about the availability of air monitoring and other resources for the program.

Eastern Coachella Valley Area (ECV) CSC
Staff held a virtual AB 617 ECV CSC meeting on January 21 with approximately 70 participants. The meeting focused on the continued development of the CERP and CAMP. The CSC discussed forming working teams to focus on elements of the CERP. A CSC member presented on an online survey to collect input on potential issues in the community and potential locations for air sensors. Additional topics discussed included the incentives budget and collaborations with other agencies.

Coachella Valley EJ Enforcement Task Force
Staff participated in a Coachella Valley EJ Enforcement Task Force virtual meeting on January 27. Staff reported on the formation of ECV CSC working teams to continue work on the CERP and CAMP and announced the upcoming meeting in February.

Southeast Los Angeles (SELA) CSC
Staff held a virtual AB 617 SELA CSC meeting on January 28 with approximately 65 attendees, including two Board Members. Staff introduced three new committee members, discussed CERP implementation, and presented an overview of industrial facilities in the community. Incentives strategies for Year 3 incentives and a CAMP implementation update was provided. CARB staff asked for community input on truck idling CERP actions and a catalytic converter theft deterrent program. Committee members inquired about the AB 617 program budget, incentives outreach to independent truck owners and operators, the process to inform the community of new industrial facilities and the process to fund school air filtration systems.

SPEAKERS BUREAU/VISITOR SERVICES
South Coast AQMD 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. South Coast AQMD also hosts visitors from around the world who meet with staff on a wide range of air quality issues.

Industrial Environmental Coalition of Orange County
On January 21, staff gave a presentation on proposed rules, including Warehouse Indirect Sources and RECLAIM transition. There were more than 40 participants.

Historic Highland Park Neighborhood Council
Staff participated in a virtual panel on sustainability and transportation on January 27 with approximately 20 community members. Residents were interested in learning more about South Coast AQMD and mobile source issues, as well as how to file complaints and incentive programs.

COMMUNICATION CENTER STATISTICS

The Communication Center handles calls on South Coast AQMD's main line, the 1-800-CUT-SMOG® line, the Spanish line, and after-hours calls to each of those lines. Total calls received in the month of January were:

Calls to South Coast AQMD's Main Line and 1-800-CUT-SMOG® Line	2,062
Calls to South Coast AQMD's Spanish-language Line	28
Clean Air Connections	4
Total Calls	2,094

PUBLIC INFORMATION CENTER STATISTICS

The Public Information Center (PIC) handles phone calls, email advisories and walk-in requests for general information. The PIC did not take walk-in requests in January because of the COVID pandemic. Email advisories provide information on upcoming meetings and events, program announcements and alerts on time sensitive issues. Information for the month of January is summarized below:

Calls Received by PIC Staff	164
Calls to Automated System	516
Total Calls	680

Email Advisories Sent	29,808

SMALL BUSINESS ASSISTANCE

South Coast AQMD notifies local businesses of proposed regulations so they can participate in the agency's rule development process. South Coast AQMD 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 virtual on-site consultation, as summarized below for January.

- Provided permit application assistance to 226 companies;
- Processed 70 Air Quality Permit Checklists; and
- Provided assistance in filing three variance requests.

Types of businesses assisted:

Architecture Firms	Dry Cleaners	Plating Facilities
Auto Body Shops	Engineering Firms	Restaurants
Auto Repair Centers	Furniture Refinishing	Manufacturing Facilities
Construction Firms	Gas Stations	Warehouses

MEDIA RELATIONS

The Media Office handles all South Coast AQMD outreach and communications with television, radio, newspapers and all other publications, and media operations. January reports are listed below:

Major Media Interactions	141
Press Releases	26
News Carousel	3

Major Media Topics:

- **Ozone Levels:** The Alpine Mountaineer requested information regarding high ozone levels at the Crestline air monitoring station. A written response was provided.
- **Trucking Emissions:** Freightwaves interviewed staff regarding the proposal to regulate truck traffic to and from warehouses.
- **All American Asphalt:** Voice of OC interviewed staff on measures South Coast AQMD plans to take regarding this facility. The reporter submitted follow-up questions and written responses were sent.
- **Tesoro:** Capital and Main had questions about public comment for the Tesoro LARIC project. Written responses were provided.
- **Valley Generating Station:** LA Times, So Cal News Group, City News Service and Natural Gas Intelligence inquired regarding the VGS action. Written responses were sent.
- **Capture and Control –** Random Lengths requested documentation related to the capture and control system for oil tankers. Sent information.
- **Refinery Tank Applications:** Capital and Main submitted a list of questions regarding permitting, oil storage, and emissions. Reporter also requested information on refinery tank applications. Written responses were provided.
- **Emergency Order for Crematoriums/Extension to Emergency Order:** Los Angeles Times, LA Daily News, the Guardian, the Orange County Register, SCV Signal, Vox, Lusa (Portuguese publication), and Agencia EFE inquired regarding the Emergency Order and permitting limits for crematoriums. Written responses were sent to each. Staff participated in interviews with the Los Angeles Times and NBC4. Univision requested an interview with a Spanish speaker. Staff provided recorded responses in Spanish.
- **Air Toxics Rule:** CalMatters inquired how South Coast AQMD will be impacted by the Trump Administration's change to the "once-in, always in" air toxics rule. Written responses were provided.
- **Updates to AQI Map**: CityWatchLA asked how the new AQI map incorporates PurpleAir data. Copies of current press releases were

provided.

- **WAIRE Program:** Supply Chain Drive submitted a list of written questions about the WAIRE program. Written responses were provided.
- **Coastal Air Quality:** Los Angeles Times inquired about the recent decline in air quality at night in the coastal region. Reporter was provided information on air quality data and maps.
- **Benzene Monitoring:** Capital & Main inquired if South Coast AQMD regularly tests for benzene at refineries. Confirmed both the community and fenceline monitoring regularly measure for benzene levels.
- **Creosote Treated Wood:** NBC News submitted questions about the use of creosote treated railroad ties on residential property. Referred the reporter to DTSC.
- **Chevron Refinery Flaring:** Bloomberg News submitted questions regarding the unplanned flaring event. Written responses were provided.
- **No-Burn Alerts:** Pitches were sent to local news outlets regarding No-Burn Alerts on January 2-3, 6 and 17 that resulted in television, radio and print coverage.
- **VGS NOV Press Release (1/7):** Pitches were sent to local news outlets containing the release on the NOV for Valley Generating Station resulting in local radio and print coverage.
- **Board Member Kuehl Press Release (1/8):** Pitches were sent to local news outlets regarding the re-appointment of Board Member Kuehl resulting in radio and print coverage.
- **DEIO Press Release (1/12) -** Pitches were sent to local news outlets announcing the addition of South Coast AQMD's new Diversity, Equity and Inclusion Officer with coverage in the LA Sentinel.
- **EPA App Award Press Release (1/13) -** Pitches were sent to local news outlets on U.S. EPA's Clean Air Excellence award for the South Coast AQMD app.
- **Smoke Advisory (1/15):** Pitches were sent to local news media outlets on the smoke advisory for the Bonita Fire near Mountain Center with coverage on local radio and television and online outlets.
- **Emergency Order for Crematoriums (1/17):** Pitches were sent to local news media outlets with information about the Emergency Order resulting in national and international coverage on all major local television networks, Associated Press, all local radio stations, all major newspaper outlets and international coverage.
- **Expansion of Emergency Order (1/25):** Pitches were sent to news outlets announcing the extension of the EO and expansion to Orange County resulting in additional local radio and newspaper coverage.

News Releases:

- **No-Burn Day - Mandatory Wood-Burning Ban In Effect For Residents Of The South Coast Air Basin - January 2-3, 6, and 17, 2021 (English and Spanish):** Informed residents of the No-Burn Days.
- **$5 million Volkswagen Light Duty Electric Vehicle Infrastructure Program to open in February - January 5, 2021:** Informed residents of Volkswagen's upcoming EV infrastructure program.
- **South Coast AQMD issues violation for methane leaks at LADWP - January 7, 2021 (English and Spanish):** Informed residents of enforcement actions regarding LADWP.
- **Supervisor Sheila Kuehl Returns to South Coast AQMD Governing Board - January 8, 2021 (English and Spanish):** Informed residents of the re-appointment of Sheila Kuehl to the Board.
- **South Coast AQMD Hires Diversity, Equity and Inclusion Officer to Elevate Programs and Initiatives - January 12, 2021 (English and Spanish):** Informed residents of the hiring of the new Diversity, Equity and Inclusion Officer.
- **South Coast AQMD Mobile App Wins US EPA's Clean Air Excellence Award - January 13, 2021 (English and Spanish):** Informed residents of the Clean Air Excellence Award given to the South Coast AQMD app.
- **"Volvo Trucks' Customer Dependable Highway Express Reduces Carbon Footprint by Electrifying Southern California Distribution Facility" - January 14, 2021:** Shared the Volvo press release on green upgrades to their customer facility.
- **South Coast AQMD Issues Smoke Advisory Due to Bonita Fire - January 15, 2021 (English and Spanish):** Informed residents of smoke conditions due to the Bonita fire.
- **South Coast AQMD Issues Emergency Order for Crematoriums due to COVID-19- January 17, 2021 (English and Spanish):** Informed residents of the Emergency Order going into effect regarding crematoriums.
- **South Coast AQMD Issues Windblown Dust and Ash Advisory - January 17, 2021 (English and Spanish):** Informed residents of the dust and ash event.
- **South Coast AQMD Expands Emergency Order for Crematoriums to Orange County – January 25, 2021 (English and Spanish):** Informed residents of the Emergency Order extension for crematoriums and the expansion to include Orange County facilities.

Social Media Notable posts:

- AQ Forecast (1/4): 6,403 Twitter Impressions
- Governing Board Meeting Live Stream (1/8): 4,447 Twitter Impressions
- Windblown Dust Advisory (1/17): 56,228 Twitter Impressions
- Bonita Fire Smoke Advisory (1/15): 26,135 Twitter Impressions
- AQ Forecast (1/23): 3,541 Twitter Impressions

News Carousel:

- Keep up with the Latest News from South Coast AQMD - January 21, 2021: Shared the latest edition of the Advisor newsletter.
- CLEANAIR Furnace Rebate Program - January 27, 2021: Provided information on the rebate program.
- Prob 1B funding availability - January 29, 2021: Provided information on available funding for clean heavy-duty trucks.

OUTREACH TO COMMUNITY GROUPS AND FEDERAL, STATE, AND LOCAL GOVERNMENTS

In light of COVID-19, outreach was conducted virtually in January, utilizing web based and other technologies to communicate with elected officials or staff from the following cities:

Agoura Hills	Colton	Hidden Hills
Alhambra	Commerce	Huntington Beach
Aliso Viejo	Covina	Huntington Park
Anaheim	Cudahy	Industry
Arcadia	Culver City	Inglewood
Artesia	Cypress	Irvine
Azusa	Dana Point	Irwindale
Baldwin Park	Diamond Bar	La Cañada Flintridge
Banning	Downey	La Habra
Bell	Duarte	La Habra Heights
Bell Gardens	Eastvale	La Puente
Bellflower	El Monte	La Verne
Big Bear Lake	El Segundo	Laguna Niguel
Bradbury	Fontana	Lawndale
Brea	Fullerton	Lomita
Buena Park	Garden Grove	Long Beach
Burbank	Gardena	Los Alamitos
Calabasas	Glendale	Los Angeles
Carson	Glendora	Malibu
Cerritos	Hawaiian Gardens	Manhattan Beach
Claremont	Hawthorne	Maywood
Coachella	Hermosa Beach	Mission Viejo

Monrovia	Rolling Hills	South El Monte
Monterey Park	Rolling Hills Estates	South Gate
Newport Beach	Rosemead	South Pasadena
Norwalk	San Bernardino	Stanton
Ontario	San Clemente	Temple City
Orange	San Dimas	Torrance
Palos Verdes Estates	San Fernando	Tustin
Pasadena	San Gabriel	Upland
Pico Rivera	San Juan Capistrano	Vernon
Placentia	San Marino	Villa Park
Pomona	San Pedro	Walnut
Rancho Cucamonga	Santa Clarita	West Covina
Rancho Palos Verdes	Santa Fe Springs	Westlake Village
Rancho Santa Margarita	Seal Beach	Westminster
Redondo Beach	Sierra Madre	Whittier
Riverside	Signal Hill	Yorba Linda

Communication conducted in January with elected officials and/or staff from the following state and federal offices:

- U.S. Senator Kamala Harris
- U.S. Senator Dianne Feinstein
- U.S. Senator Alex Padilla
- U.S. Representative Nanette Barragán
- U.S. Representative Tony Cardenas
- U.S. Representative Judy Chu
- U.S. Representative Mike Garcia
- U.S. Representative Young Kim
- U.S. Representative Ted Lieu
- U.S. Representative Grace Napolitano
- U.S. Representative Adam Schiff
- U.S. Representative Brad Sherman
- U.S. Representative Norma Torres
- Senator Ben Allen
- Senator Bob Archuleta
- Senator Steven Bradford
- Senator Robert Hertzberg
- Senator Connie Leyva
- Senator Josh Newman
- Senator Anthony Portantino
- Senator Susan Rubio
- Senator Scott Wilk
- Assembly Member Autumn Burke
- Assembly Member Lisa Calderon
- Assembly Member Ed Chau
- Assembly Member Philip Chen
- Assembly Member Laura Friedman
- Assembly Member Eduardo Garcia
- Assembly Member Mike Gipson
- Assembly Member Eloise Gómez Reyes
- Assembly Member Chris Holden
- Assembly Member Suzette Martinez Valladares
- Assembly Member Al Muratsuchi
- Assembly Member Patrick O'Donnell
- Assembly Member Luz Rivas
- Assembly Member Blanca Rubio
- Assembly Member Thurston Smith

Staff represented South Coast AQMD in January and/or provided updates or a presentation to the following governmental agencies and business organizations:

Association of California Cities, Orange County
Baldwin Hills Community Standards District Community Advisory Panel
California Contract Cities Association
California Fuel Cell Partnership
California Air Resources Board
City of Pasadena Neighborhood Connections
Clean Power Alliance
Coachella Valley Association of Governments
Community Choice Aggregation, Orange County
Department of Toxic Substances Control
Gateway Cities Council of Governments
Imperial Irrigation District
Inland Action
Inland Empire Chamber Alliance
Inland Empire Regional Chamber of Commerce
Inland Empire Fire Safe Alliance
Inland Valley Development Agency
LA Metro
Las Virgenes-Malibu Council of Governments
League of California Cities
Los Angeles County Board of Supervisors
Los Angeles County Department of Health
Los Angeles County Department of Public Works
Los Angeles World Airports
Mountain Transit Board
Move CA
North Orange County Chamber of Commerce
Omnitrans
Ontario International Airport
Orange County Board of Supervisors
Orange County Business Council
Orange County Council of Governments
Orange County Transportation Authority
Pasadena Chamber of Commerce
Pasadena Human Services & Recreation, Neighborhood Connections
Port of Long Beach
Rancho Cucamonga Municipal Utility
Riverside County Board of Supervisors
Riverside County Health Coalition
Riverside County Transportation Commission

San Bernardino County Board of Supervisors
San Bernardino County Transportation Authority
San Bernardino International Airport
San Fernando Valley Council of Governments
San Gabriel Valley City Managers' Association
San Gabriel Valley Council of Governments
San Gabriel Valley Economic Partnership
Santa Ana Chamber of Commerce
South Bay Cities Council of Governments
South Pasadena Chamber of Commerce
Southern California Association of Governments
Speak Up Newport
Sunline Transit Agency
Sunshine Canyon Landfill Advisory Committee
U.S. Forest Service
U.S. Green Building council
Western Community Energy
Western Riverside Council of Governments

Staff represented South Coast AQMD in January and/or provided updates or a presentation to the following community and educational groups and organizations:

Asian Pacific Islanders Forward Movement
Belvedere Middle School, Los Angeles
California State University, Fullerton
Clean Healthy Air, Clean Healthy Altadena
Clean Air Coalition of North Whittier and Avocado Heights
Coalition for Clean Air
Esperanza Community Housing
Highland Park Neighborhood Council
John W. North High School, Riverside
League of Women Voters, San Gabriel Valley
Long Beach Alliance for Children with Asthma
Los Angeles Cleantech Incubator
Pasadena Sierra Club
Residents for a Better Alhambra
Saint John Bosco High School, Bellflower
San Gabriel Rotary Club
Santa Ana College
South Gate High School
Taking Responsibility and Control Neighborhood Watch Group, La Puente
United Way
University of California, Irvine

University of California, Riverside
Visual Artists Guild, Los Angeles
West Covina Beautiful
Youth Science Center, Hacienda Heights

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 14

REPORT: Hearing Board Report

SYNOPSIS: This reports the actions taken by the Hearing Board during the period of January 1 through January 31, 2021.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Julie Prussack
Chairman of Hearing Board

FT

Two summaries are attached: **January 2021 Hearing Board Cases** and **Rules From Which Variances and Orders for Abatement Were Requested in 2021**. An index of South Coast AQMD Rules is also attached.

There were no appeals filed during the period of January 1 to January 31, 2021.

Report of January 2021 Hearing Board Cases

Case Name and Case No. (South Coast AQMD Attorney)	Rules	Reason for Petition/Hearing	South Coast AQMD Position/Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
1. Beltone Cleaners Case No. 6207-1 (B. Tomasovic)	1421	Petitioner sought extension of time to continue using its Perc dry cleaning machine.	Not Opposed/Granted	RV granted commencing 1/20/21 and continuing through 4/20/21, or upon installation of a 1421-compliant machine, whichever comes first.	Perc: .22 lb/day (when machine operated)
2. Coast Plating (Valence Surface Tech) Case No. 6201-1 (S. Hanizavareh)	203(b) 1469	Petitioner sought an emergency variance to continue operating after a failed source test for hexavalent chromium.	Opposed/Dismissed	EV dismissed.	N/A
3. Frantz Cleaners, Inc Case No. 6188-1 (K. Manwaring)	1421	Petitioner sought extension of time to continue using its Perc dry cleaning machine.	Opposed/Granted	RV granted commencing 1/6/21 and continuing through 4/30/21, or upon installation of a 1421-compliant machine, whichever comes first.	Perc: .22 lb/day (when machine operated)
4. Knight Cleaners Case No. 6194-1 (B. Tomasovic)	1421	Petitioner sought extension of time to continue using its Perc dry cleaning machine.	Not Opposed/Granted	RV granted commencing 1/20/21 and continuing through 4/30/21, or upon installation of a 1421-compliant machine, whichever comes first.	Perc: .22 lbs/day (when machine operated)

Case Name and Case No. (South Coast AQMD Attorney)	Rules	Reason for Petition/Hearing	South Coast AQMD Position/Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
5. North Hills Cleaners Case No. 6198-1 (S. Hanizavareh)	1421	Petitioner sought extension of time to continue using its Perc dry cleaning machine.	Not Opposed/Granted	RV granted commencing 1/28/21 and continuing through 5/30/21, or upon installation of a 1421-compliant machine, whichever comes first.	Perc: .22 lb/day (when machine operated)
6. Occidental Cleaners Case No. 6192-1 (D. Hsu)	1421	Petitioner sought extension of time to continue using its Perc dry cleaning machine.	Opposed/Denied	RV Denied.	N/A
7. Orange County Sanitation District Case No. 2048-15 (S. Hanizavareh)	203(b) 3002(c)(1)	Petitioner sought an extension of the time to perform required ammonia slip testing to complete an overhaul project on the subject out-of-operation engine.	Not Opposed/Granted	RV granted commencing 1/27/21 and continuing through 4/28/22, the FCD.	None
8. Parklane Cleaners Case No. 6189-1 (S. Pruitt)	1421	Petitioner sought extension of time to continue using its Perc dry cleaning machine.	Opposed/Granted	RV granted commencing 1/13/21 and continuing through 1/31/21.	Perc: .22 lb/day (when machine operated)

Case Name and Case No. (South Coast AQMD Attorney)	Rules	Reason for Petition/Hearing	South Coast AQMD Position/Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
9. Superior Cleaners Case No. 5842-2 (K. Roberts & J. Lee)	1421	Petitioner sought an interim variance for an extension of time to continue using its Perc dry cleaning machine.	Opposed/Dismissed	IV dismissed without prejudice.	N/A
10. Taft Cleaners Case No. 5842-2 (E. Chavez & K. Roberts)	1421	Petitioner sought extension of time to continue using its Perc dry cleaning machine.	Opposed/Granted	RV granted commencing upon notice pursuant to Condition No.1 and continuing through 4/30/21, or upon installation of a 1421-compliant machine, whichever comes first.	Perc: .22 lb/day (when machine operated)
11. Westwood Cleaners Case No. 6195-1 (S. Hanizavareh)	1421	Petitioner sought extension of time to continue using its Perc dry cleaning machine.	Opposed/Granted	RV granted commencing 1/21/21 and continuing through 4/30/21, or upon installation of a 1421-compliant machine, whichever occurs first.	Perc: .22 lb/day (when machine operated)

Acronyms

EV: Emergency Variance
FCD: Final Compliance Date
IV: Interim Variance
N/A: Not Applicable
NH_3: Ammonia
NOx: Oxides of Nitrogen
O/A: Order for Abatement
Perc: Perchloroethylene
PM: Particulate Matter
SCR: Selective Catalytic Reduction
SV: Short Variance
TBD: To Be Determined
VCU: Vapor Combustion Unit

Rules from which Variances and Orders for Abatement were Requested in 2021													
Rules	**Jan**	**Feb**	**Mar**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Total Actions**
203(b)	2												2
1421	9												9
1469	1												1
3002(cc)(1)	1												1

SOUTH COAST AQMD RULES AND REGULATIONS INDEX
FOR 2020 HEARING BOARD CASES AS OF JANUARY 31, 2021

REGULATION II – PERMITS

Rule 203 Permit to Operate

REGULATION XIV - TOXICS AND OTHER NON-CRITERIA POLLUTANTS

Rule 1421 Control of Perchloroethylene Emissions from Dry Cleaning Systems
Rule 1469 Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Rule 3002 Requirements

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 15

REPORT: Civil Filings and Civil Penalties Report

SYNOPSIS: This reports the monthly penalties from January 1, 2021 through January 31, 2021, and legal actions filed by the General Counsel's Office from January 1 through January 31, 2021. An Index of South Coast AQMD Rules is attached with the penalty report.

COMMITTEE: Stationary Source, February 19, 2021, Reviewed

RECOMMENDED ACTION:
Receive and file.

Bayron T. Gilchrist
General Counsel

BTG:ew

There were no Civil Filings for January 2021.

Attachments
January 2021 Penalty Report
Index of South Coast AQMD Rules and Regulations

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
General Counsel's Office

Settlement Penalty Report (01/01/2021 - 01/31/2021)

Penalties

Civil Settlement:	$17,550.00
Hearing Board Settlement:	$25,000.00
MSPAP Settlement:	$4,575.00
Total Cash Settlements:	$47,125.00
Fiscal Year through 01/31/2021 Cash Total :	$3,661,877.59

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbrs	Total Settlement
Civil						
109939	ARROW CONCRETE CUTTING CO, INC	203(a), 1403	01/06/2021	KER	P63776, P65927, P66416	$2,500.00
191119	E&B NATURAL RESOURCES MANAGEMENT CORP	203(b), 1148.1, 1173	01/06/2021	JL	P66850	$7,000.00
113873	MM WEST COVINA LLC	218, 3002	01/28/2021	SH	P66460	$3,750.00
15793	RIV CO, WASTE RESOURCES MGMT DIST, LAMB	203(b), 3002	01/26/2021	TB	P67425, P72906	$3,800.00
64093	S & C OIL CO INC	1148.1	01/26/2021	MR	P66542	$500.00
Total Civil Settlements : $17,550.00						
Hearing Board						
104234	SCAQMD v. Mission Foods	202, 203(b), 1153.1, 1303	01/14/2021	KCM	5400-4	$25,000.00
Total Hearing Board Settlements : $25,000.00						
MSPAP						
141435	CAL COAST INC	203(b), 461, H&S 41960.2	01/06/2021	GC	P68123	$1,500.00
173981	HOLLYWOOD RIVIERA CARWASH, INC., STEVE S	461	01/06/2021	GC	P68425	$300.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbrs	Total Settlement
172198	JACOS & CO INC/7-ELEVEN STORE 39682A	461	01/07/2021	TCF	P69858	$375.00
190671	KOUROSH YASHAR	1403, 40 CFR 61.145	01/07/2021	TCF	P67480, P67481	$1,600.00
176848	SOUTH CITY CIRCLE K AND 76	461	01/07/2021	TCF	P69031	$800.00
Total MSPAP Settlements : $4,575.00						

SOUTH COAST AQMD RULES AND REGULATIONS INDEX
FOR JANUARY 2021 PENALTY REPORT

REGULATION II - PERMITS

Rule 202	Temporary Permit to Operate
Rule 203	Permit to Operate
Rule 218	Continuous Emission Monitoring

REGULATION IV - PROHIBITIONS

Rule 461	Gasoline Transfer and Dispensing

REGULATION XI - SOURCE SPECIFIC STANDARDS

Rule 1148.1	Oil and Gas Production Wells
Rule 1153.1	Emissions of Oxides of Nitrogen from Commercial Food Ovens
Rule 1173	Fugitive Emissions of Volatile Organic Compounds

REGULATION XIII - NEW SOURCE REVIEW

Rule 1303	Requirements

REGULATION XIV - TOXICS

Rule 1403	Asbestos Emissions from Demolition/Renovation Activities

REGULATION XXX - TITLE V PERMITS

Rule 3002	Requirements for Title V Permits

CALIFORNIA HEALTH AND SAFETY CODE

41960.2	Gasoline Vapor Recovery

CODE OF FEDERAL REGULATIONS

40 CFR 61.145	Standard for demolition and renovation

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 16

REPORT: Lead Agency Projects and Environmental Documents Received

SYNOPSIS: This report provides a listing of CEQA documents received by the South Coast AQMD between January 1, 2021 and January 31, 2021, and those projects for which the South Coast AQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, February 19, 2021, Reviewed

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

SR:SN:JW:LS:MC

CEQA Document Receipt and Review Logs (Attachments A and B) – Each month, the South Coast AQMD receives numerous CEQA documents from other public agencies on projects that could adversely affect air quality. A listing of all documents received during the reporting period January 1, 2021 to January 31, 2021 is included in Attachment A. A list of active projects for which South Coast AQMD staff is continuing to evaluate or prepare comments for the December reporting period is included as Attachment B. A total of 46 CEQA documents were received during this reporting period and 8 comment letters were sent.

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. As required by the Environmental Justice Program Enhancements for FY 2002-03, approved by the Board in October 2002, each attachment notes proposed projects where the South Coast AQMD has been contacted regarding potential air quality-related environmental justice concerns. The South Coast AQMD has established an internal central contact to receive information on projects

with potential air quality-related environmental justice concerns. The public may contact the South Coast AQMD about projects of concern by the following means: in writing via fax, email, or standard letters; through telephone communication; and as part of oral comments at South Coast AQMD meetings or other meetings where South Coast AQMD staff is present. The attachments also identify, for each project, the dates of the public comment period and the public hearing date, if applicable. 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; general land use projects, etc. In response to the mitigation component, guidance information on mitigation measures was 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 South Coast AQMD's website at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies. Staff will continue compiling tables of mitigation measures for other emission sources.

Staff focuses on reviewing and preparing comments for projects: where the South Coast AQMD is a responsible agency; that may have significant adverse regional air quality impacts (e.g. special event centers, landfills, goods movement); that may have localized or toxic air quality impacts (e.g. warehouse and distribution centers); where environmental justice concerns have been raised; and which a lead or responsible agency has specifically requested South Coast AQMD review. If staff provided written comments to the lead agency as noted in the column "Comment Status," there is a link to the "South Coast AQMD Letter" under the Project Description. In addition, if staff testified at a hearing for the proposed project, a notation is provided under the "Comment Status." If there is no notation, then staff did not provide testimony at a hearing for the proposed project.

During the period of January 1, 2021 to January 31, 2021, the South Coast AQMD received 46 CEQA documents. Of the 54 documents listed in Attachments A and B:

- 8 comment letters were sent;
- 21 documents were reviewed, but no comments were made;
- 20 documents are currently under review;
- 0 documents did not require comments (e.g., public notices);
- 0 documents were not reviewed; and
- 5 documents were screened without additional review.

(The above statistics are from January 1, 2021 to January 31, 2021 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 South Coast AQMD's CEQA webpage at the following internet address: http://www.aqmd.gov/home/regulations/ceqa/commenting-agency.

South Coast AQMD Lead Agency Projects (Attachment C) – Pursuant to CEQA, the South Coast AQMD 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 for action is considered to be a "project" as defined by CEQA. For example, an Environmental Impact Report (EIR) is prepared when the South Coast AQMD, as lead agency, finds substantial evidence that the project may have significant adverse effects on the environment. Similarly, a Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the South Coast AQMD determines that the 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 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 South Coast AQMD is lead agency and is currently preparing or has prepared environmental documentation. As noted in Attachment C, the South Coast AQMD continued working on the CEQA documents for three active projects during January.

Attachments

A. Incoming CEQA Documents Log
B. Ongoing Active Projects for Which South Coast AQMD Has or Will Conduct a CEQA Review
C. Active South Coast AQMD Lead Agency Projects

ATTACHMENT A*
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Warehouse & Distribution Centers **SBC210105-05** Bloomington Business Park Specific Plan Project	The project consists of construction of two warehouses totaling 3,227,799 square feet on 213 acres. The project is located on the southeast corner of Santa Ana Avenue and Alder Avenue in the community of Bloomington. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/SBC210105-05.pdf Comment Period: 12/30/2020 - 1/29/2021 Public Hearing: 1/14/2021	Notice of Preparation	County of San Bernardino	South Coast AQMD staff commented on 1/19/2021
Warehouse & Distribution Centers **SBC210105-07** Barton Road Logistics Center	The project consists of demolition of 659,435 square feet of existing buildings and construction of two warehouses totaling 960,040 square feet on 45.52 acres. The project is located on the southeast corner of Walnut Avenue and Terrace Avenue. Reference SBC200218-03 Comment Period: 1/4/2021 - 2/17/2021 Public Hearing: 1/26/2021	Notice of Availability of a Draft Environmental Impact Report	City of Colton	Document reviewed - No comments sent for this document received
Warehouse & Distribution Centers **SBC210119-01** Multi-Tenant Industrial Warehouse Project	The project consists of demolition of an existing structure and construction of a 179,400-square-foot warehouse on 9.01 acres. The project is located at 10797 New Jersey Street near the southeast corner of New Jersey Street and West Park Avenue. Comment Period: 1/18/2021 - 2/17/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Redlands	Document reviewed - No comments sent for this document received
Warehouse & Distribution Centers **SBC210126-02** Merrill Commerce Center Specific Plan	Staff provided comments on the Draft Environmental Impact Report for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/November/SBC201008-05.pdf. The project consists of construction of 7,014,000 square feet of warehouses and 1,441,000 square feet of business park uses on 376.3 acres. The project is located on the southwest corner of Eucalyptus Avenue and Carpenter Avenue. Reference SBC201008-05 and SBC190416-05 Comment Period: N/A Public Hearing: 2/2/2021	Final Environmental Impact Report	City of Ontario	Document reviewed - No comments sent for this document received

**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.

Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Warehouse & Distribution Centers **SBC210126-06** Majestic Chino Heritage Project	The project consists of filling of 608,896 cubic yards of soil for future development of two warehouses totaling 2,082,750 square feet on 96.9 acres. The project is located on the southwest corner of Mountain Avenue and Bickmore Avenue in the City of Chino. Reference SBC200522-01 and SBC190322-09 Comment Period: 1/25/2021 - 2/24/2021 Public Hearing: N/A	Notice of Availability of a Draft Environmental Assessment	United States Army Corps of Engineers	Document reviewed - No comments sent for this document received
Industrial and Commercial **LAC210119-02** Beverly Hills Creative Offices Specific Plan Project	The project consists of construction of 11 office buildings totaling 128,282 square feet with subterranean parking on 2.49 acres. The project is located on the northeast corner of Alpine Drive and North Santa Monica Boulevard. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/LAC210119-02.pdf Comment Period: 1/15/2021 - 2/19/2021 Public Hearing: 2/4/2021	Notice of Preparation	City of Beverly Hills	South Coast AQMD staff commented on 2/16/2021
Industrial and Commercial **ORC210128-02** Lock and Leave Self Storage Project	The project consists of construction of a 108,148-square-foot self-storage facility on a 6.88-acre portion of 15.37 acres. The project is located at 25242 Arctic Ocean Drive near the southwest corner of Artic Ocean Drive and Commercentre Drive. Comment Period: 1/28/2021 - 2/26/2021 Public Hearing: 4/8/2021	Mitigated Negative Declaration	City of Lake Forest	Document reviewed - No comments sent for this document received
Industrial and Commercial **SBC210105-04** Mission Boulevard and Ramona Avenue Business Park Project	The project consists of demolition of existing structures and construction of 514,269 square feet of industrial uses on 27.74 acres. The project is located on the northwest corner of Mission Boulevard and Ramona Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/SBC210105-04.pdf Comment Period: 1/4/2021 - 2/3/2021 Public Hearing: 1/13/2021	Notice of Preparation	City of Montclair	South Coast AQMD staff commented on 2/2/2021

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **LAC210112-03** Valley Generating Station Demolition Project (Units 1-4 and Associated Structures)	The project consists of demolition of ancillary structures for the decommissioned electricity generating units. The project is located at 11801 Sheldon Street near the northeast corner of San Fernando Boulevard and Shelton Street in the community of Sun Valley. Comment Period: 1/7/2021 - 2/8/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Los Angeles Department of Water and Power	Document reviewed - No comments sent for this document received
Waste and Water-related **LAC210112-04** Stormwater Capture Parks Program	The project consists of construction of stormwater capture and runoff diversion facilities at nine City-owned parks on 829,000 square feet. The project is located along State Route (SR) 170 and is bounded by Interstate 5 to the north and east, SR 134 to the south, and Coldwater Canyon Avenue to the west in the communities of Pacoima, Sun Valley, and North Hollywood. Comment Period: 1/7/2021 - 2/8/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Los Angeles Department of Water and Power	Document reviewed - No comments sent for this document received
Waste and Water-related **LAC210114-02** Former Berg Metals Corporation	The project consists of evaluation of soil contaminated with lead, copper, antimony, and zinc on 10.6 acres. The project is located at 2652 Long Beach Avenue near the southeast corner of Long Beach Avenue and East 24th Street in the City of Los Angeles within the designated AB 617 Southeast Los Angeles community. Comment Period: 1/18/2021 - 4/19/2021 Public Hearing: N/A	Investigation and Site Evaluation	Department of Toxic Substances Control	Under review, may submit written comments
Waste and Water-related **LAC210114-07** Quemetco, Inc.	The project consists of renewal of an existing hazardous waste facility permit and a tentative decision on the permit renewal. The project is located at 720 South Seventh Avenue near the northeast corner of South Seventh Avenue and Salt Lake Avenue in the City of Industry. Reference LAC191115-02 and LAC180726-06 Comment Period: N/A Public Hearing: N/A	Community Notice	Department of Toxic Substances Control	Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **LAC210119-04** Pico Union Remediation Project	The project consists of development of cleanup actions to remove soil contaminated with arsenic and lead on 0.3 acres. The project is located at 1554 West 11th Place on the southeast corner of West 11th Place and South Union Avenue in the City of Los Angeles. Comment Period: 1/7/2021 - 2/5/2021 Public Hearing: N/A	Draft Removal Action Workplan	Department of Toxic Substances Control	Document reviewed - No comments sent for this document received
Waste and Water-related **ORC210106-01** The Former Endevco Corporation	Staff provided comments on the Draft Site Investigation and Corrective Action for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/December/ORC201124-09.pdf. The project consists of development of cleanup actions to remediate soil contaminated with volatile organic compounds and a land use covenant to prohibit future sensitive land uses on 15.3 acres. The project is located at 30700 Rancho Viejo Road near the southeast corner of Rancho Viejo Road and Malaspina Road in the City of San Juan Capistrano. Reference ORC201124-09 Comment Period: N/A Public Hearing: N/A	Response to Comments	Department of Toxic Substances Control	Document reviewed - No comments sent for this document received
Waste and Water-related **ORC210112-08** General Electric International, Inc., Los Angeles Service Center	The project consists of modifications to an existing hazardous waste storage facility permit to update emergency contact information. The project is located at 3601 East La Palma Avenue on the northeast corner of East La Palma Avenue and North Grove Street in the City of Anaheim. Reference ORC160628-01 and ORC160406-03 Comment Period: N/A Public Hearing: N/A	Permit Modification	Department of Toxic Substances Control	Document reviewed - No comments sent for this document received
Waste and Water-related **ORC210112-09** Ascon Landfill Site	The project consists of collection and analysis of soil and soil vapor samples to identify areas that may have the potential to generate odors on 38 acres. The project is located at 21641 Magnolia Street on the southwest corner of Hamilton Avenue and Magnolia Street in the City of Huntington Beach. Reference LAC160818-07 and LAC150630-21 Comment Period: N/A Public Hearing: N/A	Odor Assessment Field Investigation	Department of Toxic Substances Control	Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **ORC210126-04** Former La Veta Refuse Disposal Station	The project consists of development of post landfill closure improvements, groundwater monitoring, and a land use covenant to prohibit future sensitive land uses on 5.95 acres. The project is located at 2205 East Palmyra Avenue on the northwest corner of East Palmyra Avenue and South Tracy Lane in the City of Orange. Comment Period: N/A Public Hearing: N/A	Post Closure Land Use Plan	Department of Toxic Substances Control	Under review, may submit written comments
Waste and Water-related **RVC210112-02** Integrated Vector Management Program	The project consists of renewal of an existing national pollutant discharge elimination system permit to continue suppression of vector populations and arbovirus transmission. The project encompasses 2,400 square miles of service area and includes cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, Rancho Mirage, and unincorporated areas of Riverside County in the designated AB 617 Eastern Coachella Valley community. Reference RVC161223-02, RVC160205-02, RVC131220-02, and RVC111222-02 Comment Period: N/A Public Hearing: N/A	Initial Project Consultation	Coachella Valley Mosquito and Vector Control District	Document reviewed - No comments sent for this document received
Waste and Water-related **SBC210112-10** Advanced Environmental, Inc. DBA World Oil Environmental Services	Staff provided comments on the Draft Standardized Hazardous Waste Facility Permit Renewal for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/November/SBC200922-04.pdf. The project consists of renewal of a hazardous waste facility permit to continue treatment, storage, and disposal of hazardous wastes on 4.3 acres. The project is located at 13579 Whittram Avenue on the southwest corner of Mulberry Avenue and Whittram Avenue in the City of Fontana. Reference SBC200922-04 and SBC171018-02 Comment Period: N/A Public Hearing: N/A	Response to Comments	Department of Toxic Substances Control	Document reviewed - No comments sent for this document received
Transportation **LAC210119-03** The Old Road Over Castaic Creek Project	The project consists of seismic and structural improvements to an existing bridge 247 feet in length and 35 feet in width. The project is located parallel to Interstate 5 between Live Oak Road and Bizcailuz Drive in the community of Castaic. Comment Period: 1/19/2021 - 2/18/2021 Public Hearing: N/A	Mitigated Negative Declaration	Los Angeles County Department of Public Works	Document reviewed - No comments sent for this document received

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Transportation **RVC210112-06** State Route 74 Bridge Replacement Project	The project consists of widening two existing bridges 12 feet in width for each lane to meet crash and safety standards. The project is located at two sites along State Route (SR) 74: 1) Strawberry Creek Bridge at Post Mile (PM) 53.5 near the northwest corner of Delano Drive and Idyllbrook Drive and 2) Morrill Canyon Bridge at PM 3.08 near the southeast corner of SR 74 and Rocky Road in Riverside County. Comment Period: 1/12/2021 - 2/8/2021 Public Hearing: 1/21/2021	Notice of Intent to Adopt a Mitigated Negative Declaration	California Department of Transportation	Document reviewed - No comments sent for this document received
Institutional (schools, government, etc.) **LAC210126-03** Alexander Hamilton High School Comprehensive Modernization Project	Staff provided comments on the Negative Declaration for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/November/LAC201020-02.pdf. The project consists of demolition of 126,878 square feet of existing structures, modernization of two buildings totaling 84,745 square feet, and construction of five school facilities totaling 149,173 square feet on 27.7 acres. The project is located on the southwest corner of South Robertson Boulevard and Cattaraugus Avenue in the City of Los Angeles. Reference LAC201020-02 Comment Period: N/A Public Hearing: 2/9/2021	Response to Comments	Los Angeles Unified School District	Document reviewed - No comments sent for this document received
Medical Facility **LAC210105-01** 210 South Grand Avenue Medical Office Building Project	The project consists of construction of a 20,974-square-foot building on 6.4 acres. The project is located at 210 South Grand Avenue on the southeast corner of South Grand Avenue and West Carroll Avenue. Comment Period: 12/30/2020 - 1/28/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Glendora	Document reviewed - No comments sent for this document received
Medical Facility **ORC210107-01** University of California, Irvine Campus Medical Complex	Staff provided comments on the Draft Subsequent Environmental Impact Report for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/November/ORC201008-03.pdf. The project consists of construction of medical facilities totaling 375,000 square feet on 14.5 acres. The project is located near the southwest corner of Jamboree Road and Campus Drive in the City of Irvine. Reference ORC201008-03 and ORC200304-03 Comment Period: N/A Public Hearing: N/A	Response to Comments	Regents of the University of California	Document reviewed - No comments sent for this document received

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Retail **LAC210121-01** 11469 Jefferson Boulevard Project	The project consists of demolition of 33,813 square feet of existing structures and construction of a 111,000-square-foot hotel with 175 rooms and subterranean parking on 0.78 acres. The project is located at 11469 Jefferson Boulevard on the northwest corner of Jefferson Boulevard and Slauson Avenue. Comment Period: 1/21/2021 - 2/19/2021 Public Hearing: N/A	Mitigated Negative Declaration	City of Culver City	Document reviewed - No comments sent for this document received
Retail **RVC210126-05** 76 Gas Station C-Store/Q.S.R. and Retail	The project consists of construction of 13,960 square feet of retail uses, a gasoline service station with 12 pumps, and a 3,960-square-foot fueling canopy on 1.2 acres. The project is located at 41480 Sanborn Avenue on the southeast corner of Sanborn Avenue and Jefferson Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/RVC210126-05.pdf Comment Period: 1/19/2021 - 2/16/2021 Public Hearing: 2/18/2021	Site Plan	City of Temecula	South Coast AQMD staff commented on 2/9/2021
General Land Use (residential, etc.) **LAC210112-01** Baseline Road Single-Family Residential and Annexation Tentative Tract Map 82001 Project	The project consists of construction of seven residential units totaling 243,720 square feet, a 2.66-acre stormwater and drainage basin, and 10.75 acres of open space on 19.44 acres. The project is located on the northwest corner of Baseline Road and Broken Spur Road. Comment Period: 12/10/2020 - 1/8/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration (received after close of comment period)	City of La Verne	Document reviewed - No comments sent for this document received
General Land Use (residential, etc.) **LAC210114-03** Angels Landing Project	The project consists of construction of two buildings totaling 1,269,150 square feet with 432 residential units, 515 hotel rooms, and subterranean parking on 2.24 acres. The project is located at 361 South Hill Street on the northwest corner of Hill Street and Fourth Street in the community of Central City. Reference LAC190404-02 Comment Period: 1/14/2021 - 3/1/2021 Public Hearing: N/A	Draft Environmental Impact Report	City of Los Angeles	Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
General Land Use (residential, etc.) **LAC210114-06** Imperial Avalon Mixed-Use Project	The project consists of demolition of existing structures and construction of 1,213 residential units totaling 1,530,894 square feet, 7,152 square feet of commercial uses, and 647,027 square feet of parking uses on 27.31 acres. The project is located at 21207 South Avalon Boulevard near the northwest corner of South Avalon Boulevard and East 213th Street in the designated AB 617 Wilmington, Carson, West Long Beach community. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/LAC210114-06.pdf Comment Period: 1/13/2021 - 2/12/2021 Public Hearing: 1/28/2021	Notice of Preparation	City of Carson	South Coast AQMD staff commented on 2/9/2021
General Land Use (residential, etc.) **LAC210121-03** One San Pedro Specific Plan	The project consists of demolition of an existing residential building with 478 units and construction of 1,390 residential units, 85,000 square feet of amenities, and 45,000 square feet of retail uses on 21 acres. The project is located at 275 West First Street on the southeast corner of West First Street and North Centre Street in the community of San Pedro. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/LAC210121-03.pdf Comment Period: 1/13/2021 - 2/12/2021 Public Hearing: 2/6/2021	Notice of Preparation	City of Los Angeles Housing Authority	South Coast AQMD staff commented on 2/9/2021
General Land Use (residential, etc.) **LAC210121-04** Gardena Transit-Oriented Development Specific Plan Project	The project consists of demolition of a 24,990-square-foot building, and construction of 265 residential units and 15,000 square feet of open space on 1.33 acres. The project is located near the southeast corner of El Segundo Boulevard and Crenshaw Boulevard. Reference LAC200820-05 Comment Period: 1/15/2021 - 3/1/2021 Public Hearing: N/A	Draft Environmental Impact Report	City of Gardena	Document reviewed - No comments sent for this document received
General Land Use (residential, etc.) **ORC210126-01** Cypress Town Center	The project consists of construction of 135 residential units on seven acres. The project is located near the southwest corner of Vessels Circle and Walker Street. Reference ORC201001-03 Comment Period: 1/22/2021 - 3/8/2021 Public Hearing: N/A	Draft Environmental Impact Report	City of Cypress	Document reviewed - No comments sent for this document received

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
General Land Use (residential, etc.) **RVC210112-05** Ventana Specific Plan	The project consists of construction of 103 residential units totaling 1,967,605 square feet on 45.17 acres. The project is located near the northeast corner of Madison Street and Avenue 50. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/RVC210112-05.pdf Comment Period: 1/7/2021 - 2/8/2021 Public Hearing: N/A	Notice of Preparation	City of Indio	South Coast AQMD staff commented on 2/2/2021
General Land Use (residential, etc.) **RVC210119-05** MA20276	The project consists of subdivision of 9.76 acres for future development of 176 residential units. The project is located at 10001 Limonite Avenue on the northwest corner of Bain Street and Limonite Avenue. Reference RVC200602-02 Comment Period: 1/19/2021 - 1/29/2021 Public Hearing: N/A	Site Plan	City of Jurupa Valley	Document reviewed - No comments sent for this document received
General Land Use (residential, etc.) **SBC210105-02** TREH Development	The project consists of construction of 166 residential units totaling 378,972 square feet, 78,291 square feet of retail uses, a 1,825-square-foot car wash facility, and a gasoline service station with 16 pumps on 19.81 acres. The project is located on the northeast corner of Greenspot Road and State Route 210. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/SBC210105-02.pdf Comment Period: 1/5/2021 - 1/18/2021 Public Hearing: N/A	Site Plan	City of Highland	South Coast AQMD staff commented on 1/12/2021
General Land Use (residential, etc.) **SBC210105-08** Rancho del Prado Specific Plan	The project consists of construction of 350 residential units totaling 3,537,072 square feet and 121.7 acres of open space on 209.4 acres. The project is located near the northeast corner of Reche Canyon Road and Scotch Lane. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/SBC210105-08.pdf Comment Period: 1/5/2021 - 2/3/2021 Public Hearing: 1/13/2021	Notice of Preparation	City of Colton	South Coast AQMD staff commented on 2/2/2021

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Plans and Regulations **LAC210105-03** County of Los Angeles Housing Element Update	The project consists of updates to the County's General Plan Housing Element to assess housing needs, densities, and development standards. The project encompasses 4,083 square miles and is bounded by Ventura County to the north, counties of Riverside and San Bernardino to the east, Orange County to the south, and the Pacific Ocean to the west. The project includes three designated AB 617 communities: 1) East Los Angeles, Boyle Heights, West Commerce, 2) Southeast Los Angeles, and 3) Wilmington, Carson, West Long Beach. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/LAC210105-03.pdf Comment Period: 1/5/2021 - 2/4/2021 Public Hearing: 1/23/2021	Notice of Preparation	County of Los Angeles	South Coast AQMD staff commented on 2/2/2020
Plans and Regulations **LAC210114-01** Los Angeles Zoo Vision Plan	The project consists of development of policies, programs, and strategies to guide future development and recreational services with a planning horizon of 2040 on 133 acres. The project is located at 5333 Zoo Drive on the southwest corner of Zoo Drive and Western Heritage Way in the community of Hollywood. Reference LAC190125-02 Comment Period: 12/17/2020 - 2/15/2021 Public Hearing: 1/13/2021	Notice of Availability of a Draft Environmental Impact Report	City of Los Angeles	Document reviewed - No comments sent for this document received
Plans and Regulations **LAC210114-04** Hotel Development Standards General Plan and Zoning Code Amendment Project	The project consists of updates to the City's General Plan Land Use Element and zoning designations to include development standards and design guidelines for amenity hotels. The project encompasses 5.86 square miles and is bounded by City of Hawthorne to the north, City of Compton to the east, cities of Carson and Torrance to the south, and cities of El Segundo, Manhattan Beach, and Redondo Beach to the west. Comment Period: 1/14/2021 - 2/3/2021 Public Hearing: 2/16/2021	Mitigated Negative Declaration	City of Gardena	Document reviewed - No comments sent for this document received

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Plans and Regulations **LAC210114-05** 2019 Facilities Master Plan Update to the 2015 Facilities Master Plan	The project consists of development of standards, policies, and programs to guide future development of school facilities and services with a planning horizon of 2025. The project encompasses three campuses: 1) the Verdugo Campus at 1500 North Verdugo Road on the northeast corner of North Verdugo Road and East Mountain Street in the City of Glendale; 2) the Garfield Campus at 1122 East Garfield Avenue on the southeast corner of East Garfield Avenue and South Adams Street in the City of Glendale; and 3) Montrose Campus at 2340 Honolulu Avenue near the southeast corner of Honolulu Avenue and Wickham Way in the community of Montrose within Los Angeles County. Comment Period: 1/14/2021 - 3/1/2021 Public Hearing: N/A	Notice of Availability of a Draft Supplemental Environmental Impact Report	Glendale Community College District	Under review, may submit written comments
Plans and Regulations **LAC210121-02** Citywide Housing Element 2021-2029 Update and Safety Element Update	The project consists of development of policies, goals, and programs to comply with state, regional, and local housing and safety policies and guidelines with a planning horizon of 2029. The project encompasses 468.67 square miles and is bounded by City of Santa Clarita to the north, City of Burbank to the east, State Route 1 to the south, and City of Calabasas to the west. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/LAC210121-02.pdf Comment Period: 1/13/2021 - 2/15/2021 Public Hearing: N/A	Notice of Preparation	City of Los Angeles	South Coast AQMD staff commented on 2/9/2021

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT B*
ONGOING ACTIVE PROJECTS FOR WHICH SOUTH COAST AQMD HAS OR IS CONTINUING TO CONDUCT A CEQA REVIEW

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Airports **LAC201029-01** Los Angeles International Airport (LAX) Airfield and Terminal Modernization Project	The project consists of construction of an automated people mover station, a pedestrian bridge, an 11-gate concourse facility, and a 12-gate terminal. The project will also include westerly extension of one taxiway, reconfiguration of runway exits, and removal of remote gates. The project is located in the north and south airfields within the Los Angeles International Airport. The north airfield is located near the northeast corner of Pershing Drive and Sepulveda Boulevard. The south airfield is located at Taxiway C between Sepulveda Boulevard and Aviation Boulevard. Reference LAC190619-11 and LAC190404-01 Comment Period: 10/29/2020 - 3/15/2021 Public Hearing: 12/1/2020	Draft Environmental Impact Report	Los Angeles World Airports	Under review, may submit written comments
Warehouse & Distribution Centers **SBC201211-04** Olive Avenue Development Project	The project consists of construction of two warehouses totaling 679,390 square feet on 31.08 acres. The project is located near the northeast corner of West Baseline Road and North Fitzgerald Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/SBC201211-04.pdf Comment Period: 12/2/2020 - 1/21/2021 Public Hearing: N/A	Notice of Preparation	City of Rialto	South Coast AQMD staff commented on 1/7/2021
Industrial and Commercial **LAC201208-03** New Beatrice West Project	The project consists of demolition of 87,881 square feet of structures, and construction of a 199,500-square-foot office building with subterranean parking and 38,033 square feet of open space on 4.51 acres. The project is located on the northeast corner of West Beatrice Street and South Jandy Place in the community of Palms-Mar Vista-Del Rey. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/LAC201208-03.pdf Comment Period: 12/8/2020 - 1/8/2021 Public Hearing: N/A	Notice of Preparation	City of Los Angeles	South Coast AQMD staff commented on 1/7/2021
Waste and Water-related **LAC201117-07** Portuguese Bend Landslide Mitigation Project	The project consists of construction of surface water and groundwater drainage systems and structural reinforcement to control landslide. The project encompasses 285 acres and is bounded by Buma Road to the north and east, the Pacific Ocean to the south, and Peppertree Drive to the west. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/LAC201117-07.pdf Comment Period: 11/12/2020 - 1/15/2021 Public Hearing: 12/19/2020	Notice of Preparation	City of Rancho Palos Verdes	South Coast AQMD staff commented on 1/7/2021
Waste and Water-related **LAC201215-04** DeMenno-Kerdoon	The project consists of modifications to an existing hazardous waste facility permit to install an ancillary heat exchanger to a waste oil tank. The project is located at 2000 North Alameda Street on the southeast corner of North Alameda Street and East Pine Street in the City of Compton. Reference LAC201117-11, LAC200623-08, and LAC190924-05 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/february/LAC201215-04.pdf Comment Period: N/A Public Hearing: N/A	Permit Modification	Department of Toxic Substances Control	South Coast AQMD staff commented on 2/9/2021

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 SOUTH COAST AQMD HAS OR IS CONTINUING TO CONDUCT A CEQA REVIEW

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Retail **LAC201217-03** 1000 Seward Project	The project consists of construction of a 150,600-square-foot office building with subterranean parking on 0.78 acres. The project is located on the northeast corner of North Seward Street and West Romaine Street in the community of Hollywood. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/LAC201217-03.pdf Comment Period: 12/22/2020 - 1/22/2021 Public Hearing: 1/7/2021	Notice of Preparation	City of Los Angeles	South Coast AQMD staff commented on 1/19/2021
General Land Use (residential, etc.) **ORC201222-02** Legacy at Coto California Grand Villages	The project consists of construction of a 154,131-square-foot senior living facility with 95 units and subterranean parking on 3.86 acres. The project is located on the northwest corner of Avenida La Caza and Via Pavo Real in the community of Coto de Caza. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/ORC201222-02.pdf Comment Period: 12/15/2020 - 1/29/2021 Public Hearing: N/A	Notice of Preparation	County of Orange	South Coast AQMD staff commented on 1/19/2021
General Land Use (residential, etc.) **RVC201222-03** Oak Springs Ranch Phase II Project	The project consists of construction of 288 residential units totaling 561,488 square feet on 12.98 acres. The project is located near the southwest corner of Inland Valley Drive and Clinton Keith Road. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/RVC201222-03.pdf Comment Period: 12/22/2020 - 1/20/2021 Public Hearing: 1/11/2021	Notice of Preparation	City of Wildomar	South Coast AQMD staff commented on 1/19/2021

- Project has potential environmental justice concerns due to the nature and/or location of the project.

ATTACHMENT C
ACTIVE SOUTH COAST AQMD LEAD AGENCY PROJECTS
THROUGH JANUARY 31, 2021

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
Matrix Oil is proposing to: 1) install one new flare with a maximum rating of 39 million British thermal units per hour (MMBtu/hr) at Site 3 of the Sansinena Oil Field; and 2) increase the throughput of the existing flare at Site 9 from the previous permit limit of 13.65 million standard cubic feet over a 30-day period (MMSCF/30 days) to the maximum rating of 39 MMBtu/hr which is equivalent to 25.39 MMSCF/30 days.	Matrix Oil	Mitigated Negative Declaration	The consultant provided a preliminary draft Mitigated Negative Declaration which is undergoing South Coast AQMD staff review.	Yorke Engineering
Quemetco is proposing to modify existing South Coast AQMD permits to allow the facility to recycle more batteries and to eliminate the existing daily idle time of the furnaces. The proposed project will increase the rotary feed drying furnace feed rate limit from 600 to 750 tons per day and increase the amount of total coke material allowed to be processed. In addition, the project will allow the use of petroleum coke in lieu of or in addition to calcined coke, and remove one existing emergency diesel-fueled internal combustion engine (ICE) and install two new emergency natural gas-fueled ICEs.	Quemetco	Environmental Impact Report (EIR)	A Notice of Preparation/Initial Study (NOP/IS) was released for a 56-day public review and comment period from August 31, 2018 to October 25, 2018, and 154 comment letters were received. Two CEQA scoping meetings were held on September 13, 2018 and October 11, 2018 in the community. South Coast AQMD staff is reviewing the preliminary Draft EIR and has provided comments to the consultant.	Trinity Consultants
Sunshine Canyon Landfill is proposing to modify its South Coast AQMD permits for its active landfill gas collection and control system to accommodate the increased collection of landfill gas. The proposed project will: 1) install two new low emissions flares with two additional 300-hp electric blowers; and 2) increase the landfill gas flow limit of the existing flares.	Sunshine Canyon Landfill	Subsequent Environmental Impact Report (SEIR)	South Coast AQMD staff reviewed and provided comments on the preliminary air quality analysis and health risk assessment (HRA), which are being addressed by the consultant.	SCS Engineers

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 17

REPORT: Rule and Control Measure Forecast

SYNOPSIS: This report highlights South Coast AQMD rulemaking activities and public hearings scheduled for 2021.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

PMF:SN:SR:AK:ZS

2021 MASTER CALENDAR

The 2021 Master Calendar provides a list of proposed or proposed amended rules for each month, with a brief description, and a notation in the third column indicating if the rulemaking is for the 2016 AQMP, Toxics, AB 617 BARCT, or Other. Rulemaking efforts that are noted for implementation of the 2016 AQMP, Toxics, and AB617 BARCT are either statutorily required and/or are needed to address a public health concern. Projected emission reductions will be determined during rulemaking.

Staff continues to move forward with rulemaking, recognizing stakeholders' resource limitations due to COVID-19. To maintain social distancing while integrating public participation in the rulemaking process, staff is connecting with stakeholders using tele- and videoconferencing. Also, staff has increased the review time for working group materials to allow stakeholders additional time to prepare for meetings. Lastly, working group meetings have been restructured to be shorter in duration to better accommodate the tele- and video-conferencing format.

The following symbols next to the rule number indicate if the rulemaking will be a potentially significant hearing, will reduce criteria pollutants, or is part of the RECLAIM transition. Symbols have been added to indicate the following:

* *This rulemaking is a potentially significant hearing.*
+ *This rulemaking will reduce criteria air contaminants and assist toward attainment of ambient air quality standards.*
# *This rulemaking is part of the transition of RECLAIM to a command-and-control regulatory structure.*

The following table provides a list of changes since the previous Rule Forecast Report.

118.1	**Local Emergencies**
Proposed Rule 118.1 is being moved from To-Be-Determined to August 2021. PR118.1 will complement the proposed amendments to Rules 1110.2 and 1470 to address the use of emergency engines by essential public services during local emergencies.	
429.1	**Start-Up and Shutdown Exemption Provisions for Oxides of Nitrogen at Petroleum Refineries and Associated Facilities.**
Proposed Amended Rule 429 is currently on To-Be-Determined. Rule 429 provides start-up and shutdown provisions for different equipment and industry categories. Staff is proposing to separate out refinery equipment under Rule 429, and to address the startup and shutdown provisions for this industry under Proposed Rule 429.1. Proposed Amendments to Rule 429.1 is scheduled for June 2021.	
2306	**Emission Reductions from Indirect Sources at Railyards**
Proposed Rule 2306 is being moved from June 2021 to December 2021 to allow staff time to continue to develop rule concepts and to work with stakeholders.	

2021 MASTER CALENDAR

Month April	Title and Description	Type of Rulemaking
1426*	**Emissions from Metal Finishing Operations** Proposed amendments to Rule 1426 will establish requirements to reduce nickel, cadmium, hexavalent chromium, and lead from metal finishing operations. Proposed Amended Rule 1426 will focus on measures to minimize fugitive metal toxic air contaminant emissions. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics/ AB 617 CERP
1469*	**Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations** Proposed Amended Rule 1469 provides clarity by including requirements from Proposed Amended Rule 1426 for facilities subject to Rule 1469. Amendments will also remove the reference to dioctyl phthalate which is a substance no longer used to test HEPA filters and update an incorrect table reference. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics/ AB 617 CERP
2305*+ 316	**Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program** **Fees for Rule 2305** Proposed Rule 2305 will reduce emissions and facilitate local and regional emission reductions associated with warehouses and the mobile sources attracted to warehouses. Proposed Rule 316 will collect fees from facilities covered by PR 2305 to recover costs related to compliance activities. *Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 CERP
May		
1466	**Control of Particulate Emissions from Soils with Toxic Air Contaminants** Proposed amendments to Rule 1466 will clarify existing provisions, update requirements for pre-approved monitors, and streamline implementation. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1469.1*	**Spraying Operations Using Coatings Containing Chromium** Proposed Amended Rule 1469.1 will establish additional requirements to address hexavalent chromium emissions from spraying operations using chromate primers and coatings. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics/ AB 617 CERP

* *Potentially significant hearing*

[+] *Reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

[#] *Part of the transition of RECLAIM to a command-and-control regulatory structure*

2021 MASTER CALENDAR *(Continued)*

Month **May** (Continued)	Title and Description	Type of Rulemaking
Reg. III	**Fees** This is a placeholder as staff may propose minor amendments to Regulation III as part of the annual budget process. *Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
June		
429.1	**Start-Up and Shutdown Exemption Provisions for Oxides of Nitrogen at Petroleum Refineries and Associated Facilities** Proposed Rule 429.1 will establish start-up and shutdown provisions for petroleum refineries and facilities with operations associated with petroleum refineries. *Mike Morris 909-396-3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
445*	**Wood Burning Devices** Proposed Amended Rule 445 will address additional U.S. EPA requirements for Best Available Control Measures and potentially address ozone contingency measure requirements for the Coachella Valley. *Tracy Goss 909.396.3106; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP
1109*+# 1109.1*+#	**Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Petroleum Refineries** **Reduction of Emissions of Oxides of Nitrogen from Refinery Equipment** Proposed Rule 1109.1 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for NOx emitting equipment at petroleum refineries and related operations, and include monitoring, reporting, and recordkeeping requirements. Rule 1109 is proposed to be rescinded. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 BARCT/ AB 617 CERP

* *Potentially significant hearing*

+ *Reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

Part of the transition of RECLAIM to a command-and-control regulatory structure

2021 MASTER CALENDAR *(Continued)*

Month	Title and Description	Type of Rulemaking
June (Continued)		
1304*+#	**Exemptions** Proposed Amended Rule 1304 will add a narrow exemption to address co-pollutant emissions associated with compliance with a BARCT requirement to reduce NOx emissions. *Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	
1147.1*+#	**NOx Reductions for Equipment at Aggregate Facilities** Proposed Rule 1147.1 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for NOx equipment at aggregate facilities and will apply to RECLAIM and non-RECLAIM facilities.	AQMP/ AB 617 BARCT
1147*+#	**NOx Reductions from Miscellaneous Sources** Proposed Amended Rule 1147 will remove equipment that will be regulated under Proposed Rule 1147.1. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244*	
August		
118.1	**Local Emergencies** Staff is considering a proposed rule to address use of emergency standby engines for essential public services and other similar entities during specific local emergency situations. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1110.2*+#	**Emissions from Gaseous- and Liquid-Fueled Engines** Proposed amendments will address use of emergency standby engines at essential public services for Public Safety Power Shutoff programs. Proposed amendments may also be needed to incorporate possible comments by U.S. EPA for approval into the SIP and address monitoring provisions for new engines. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 BARCT
1135	**Emissions of Oxides of Nitrogen from Electricity Generating Facilities** Proposed Amended Rule 1135 will revise startup, shutdown, and malfunction requirements and monitoring, reporting, and recordkeeping provisions to reflect amendments to rules regulating Continuous Emissions Monitoring Systems. Proposed amendments may also be needed to incorporate possible comments by U.S. EPA for approval into the SIP. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 BARCT

* *Potentially significant hearing*

\+ *Reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

\# *Part of the transition of RECLAIM to a command-and-control regulatory structure*

2021 MASTER CALENDAR *(Continued)*

Month	Title and Description	Type of Rulemaking
August (Continued)		
1147.2*+#	**NOx Reductions from Metal Melting and Heating Furnaces** Proposed Rule 1147.2 will establish NOx emission limits to reflect Best Available Retrofit Control Technology for metal melting and heating furnaces and will apply to RECLAIM and non-RECLAIM facilities.	AQMP/ AB 617 BARCT
1147*+#	**NOx Reductions from Miscellaneous Sources** Proposed Amended Rule 1147 will remove equipment that will be regulated under Proposed Rule 1147.2. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	
1470	**Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines** Proposed Amended Rule 1470 will address provisions for essential public services for testing engines and additional provisions, if needed, to ensure proposed amendments meet state requirements. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
September		
219*	**Equipment Not Requiring a Written Permit Pursuant to Regulation II**	Other
461	**Gasoline Transfer and Dispensing**	
461.1	**Mobile Refueling Gasoline Transfer and Dispensing** Proposed Amended Rule 219 will modify permitting requirements for mobile fueling operations. Proposed Amended 461 will remove requirements for mobile refueling operations and Proposed Rule 461.1 will establish requirements for mobile refueling operations. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	

* *Potentially significant hearing*

+ *Reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

Part of the transition of RECLAIM to a command-and-control regulatory structure

2021 MASTER CALENDAR *(Continued)*

Month	Title and Description	Type of Rulemaking
September (Continued)		
1134	**Emissions of Oxides of Nitrogen from Stationary Gas Turbines** Proposed Amended Rule 1134 will revise startup, shutdown, and malfunction requirements and monitoring, reporting, and recordkeeping provisions to reflect amendments to rules regulating Continuous Emissions Monitoring Systems. Proposed amendments may also be needed to incorporate possible comments by U.S. EPA for approval into the SIP. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 BARCT
1157.1	**PM 10 Emission Reductions from Concrete and Asphalt Crushing and Grinding Operations** Proposed Rule 1157.1 will establish requirements to minimize PM emissions from recycled concrete and asphalt crushing and grinding operations, including storage and transfer of materials. *Tracy Goss 909.396.3106; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
October		
1115	**Motor Vehicle Assembly Line Coating Operations** Proposed amendments will address U.S. EPA RACT requirements. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1147*+#	**NOx Reductions from Miscellaneous Sources** Proposed Amended Rule 1147 will revise NOx emission limits to reflect Best Available Retrofit Control Technology for miscellaneous combustion sources and that will apply to RECLAIM and non-RECLAIM facilities.	AQMP/ AB 617 BARCT
1100#	**Implementation Schedule for NOx Facilities** Proposed Amended Rule 1100 will establish the implementation schedule for Rule 1147 equipment at NOx RECLAIM and former NOx RECLAIM facilities. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	

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2021 MASTER CALENDAR *(Continued)*

Month	Title and Description	Type of Rulemaking
October (Continued)		
1445*	**Control of Toxic Emissions from Laser Arc Cutting** Proposed Rule 1445 will establish requirements to reduce metal toxic air contaminant particulate emissions from laser arc cutting. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
Regulation XX*#	**RECLAIM** Proposed Amended Regulation XX will address the transition of RECLAIM facilities to a command and control regulatory structure. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP
November		
1118*	**Control of Emissions from Refinery Flares** Proposed Amended Rule 1118 will incorporate revisions to further reduce flaring at refineries, provisions for clean service flares, and facility thresholds. The AB 617 Community Emission Reduction Plan has an emission reduction target to reduce flaring by 50 percent, if feasible. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 CERP
1159.1	**Control of NOx Emissions from Nitric Acid Units** Proposed Rule 1159.1 will establish requirements to reduce NOx emissions from nitric acid units that will apply to RECLAIM and non-RECLAIM facilities. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 BARCT
1173	**Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants** Proposed Amended Rule 1173 will further reduce emissions from petroleum and chemical plants by requiring early leak detection approaches consistent with AB 617 Community Emission Reduction Plan. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other/ AB 617 CERP
Regulation XIII*#	**New Source Review** Proposed Amended Regulation XIII will revise New Source Review provisions to address facilities that are transitioning from RECLAIM to a command-and-control regulatory structure. Staff may be proposing a new rule within Regulation XIII to address offsets for facilities that transition out of RECLAIM. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP

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Part of the transition of RECLAIM to a command-and-control regulatory structure

2021 MASTER CALENDAR *(Continued)*

Month December	Title and Description	Type of Rulemaking
1146.2[#]	**Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters** Proposed Amended Rule 1146.2 will update the NOx emission limit to reflect Best Available Retrofit Control Technology. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 BARCT
1153.1	**Emissions of Oxides of Nitrogen from Commercial Food Ovens** Proposed amendments to Rule 1153.1 may be needed to establish NOx BARCT limits for the RECLAIM transition. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 BARCT
1178	**Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities** Proposed Amended Rule 1178 will incorporate the use of more advanced early leak detection methods and improve leak detection and repair programs for storage tanks to further reduce VOC emissions. Proposed amendments will implement one of the actions in the AB 617 Community Emission Reduction Plan. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 CERP
1426.1	**Control of Hexavalent Chromium Emissions from Metal Finishing Operations** Proposed Rule 1426.1 will reduce hexavalent chromium emissions from chromium tanks used in metal finishing operations that do not have a chromium electroplating or chromic acid anodizing tank. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1435[*]	**Control of Emissions from Metal Heat Treating Processes** Proposed Rule 1435 will establish requirements to reduce point source and fugitive toxic air contaminants including hexavalent chromium emissions from heat treating processes. Proposed Rule 1435 will also include monitoring, reporting, and recordkeeping requirements. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics/ AB 617 CERP
2306	**Emission Reductions from Indirect Sources at Railyards** Proposed Rule 2306 will reduce emissions from indirect sources associated with railyards. *Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP/ AB 617 CERP

** Potentially significant hearing*

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2021 To-Be-Determined

2021	Title and Description	Type of Rulemaking
102	**Definition of Terms** Proposed amendments may be needed to update and add definitions, and potentially modify exemptions. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
103	**Definition of Geographical Areas** Proposed amendments are needed to update geographic areas to be consistent with state and federal references to those geographic areas. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
209	**Transfer and Voiding of Permits** Proposed amendments may be needed to clarify requirements for change of ownership and permits and the assessment of associated fees. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
219	**Equipment Not Requiring a Written Permit Pursuant to Regulation II** Proposed Amendments may be needed to address issues raised by U.S. EPA for approval in the State Implementation Plan. Proposed Amendments may also be needed to identify sources that are currently exempt from permitting. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
222	**Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II** Proposed Amendments may be needed to require certain equipment that is currently not permitted to register the equipment to gather information and emissions data. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
223	**Emission Reduction Permits for Large Confined Animal Facilities** Proposed Amended Rule 223 will seek additional ammonia emission reductions from large confined animal facilities by lowering the applicability threshold. Proposed amendments will implement BCM-04 in the 2016 AQMP. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP
317	**Clean Air Act Non-Attainment Fees** Proposed amendments may be needed to modify CAA Section 185 fees for non-attainment. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other

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2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
407[#]	**Liquid and Gaseous Air Contaminants** Proposed Amended Rule 407 will update SOx emission limits to reflect Best Available Retrofit Control Technology, if needed, remove exemptions for RECLAIM facilities, and update monitoring, reporting, and recordkeeping requirements. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT
410	**Odors from Transfer Stations and Material Recovery Facilities** Proposed Amended Rule 410 will clarify existing provisions. Additional provisions may be needed to address activities associated with diversion of food waste to transfer stations or material recovery facilities. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
425	**Odors from Cannabis Processing** Proposed Rule 425 will establish requirements for control of odors from cannabis processing. *Tracy Goss 909.396.3106; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
429	**Start-Up and Shutdown Exemption Provisions for Oxides of Nitrogen** Proposed amendments to Rule 429 update start-up and shutdown provisions for combustion equipment at refineries and facilities with related operations to petroleum refineries. *Mike Morris 909-396-3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
431.1[#]	**Sulfur Content of Gaseous Fuels** Proposed Amended Rule 431.1 will assess exemptions, including RECLAIM, and update other provisions, if needed. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT/ AB 617 CERP
431.2[#]	**Sulfur Content of Liquid Fuels** Proposed Amended Rule 431.2 will assess exemptions, including RECLAIM, and update other provisions, if needed. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT/ AB 617 CERP
431.3[#]	**Sulfur Content of Fossil Fuels** Proposed Amended Rule 431.3 will assess exemptions, including RECLAIM, and update other provisions, if needed. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT/ AB 617 CERP

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2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
442.1 1107 1124 1136 1145 1171	**Usage of Solvent** **Coating of Metal Parts and Products** **Aerospace Assembly and Component Manufacturing Operations** **Wood Products Coatings** **Plastic, Rubber, Leather, and Glass Coatings** **Solvent Cleaning Operations** Proposed amendments will prohibit the sale, distribution, and application of materials that do not meet the VOC limits specified in Regulation XI rules and possible provisions to prohibit circumvention of VOC limits. *Tracy Goss 909.396.3106; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
462	**Organic Liquid Loading** Proposed Amended Rule 462 will incorporate the use of advanced techniques to detect fugitive emissions and Facility Vapor Leak. Other amendments may be needed to streamline implementation and add clarity. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
463	**Organic Liquid Storage** Proposed Amended Rule 463 will address the current test method and improve the effectiveness, enforceability, and clarity of the rule. Proposed amendments may also be needed to ensure consistency with Rule 1178. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
468[#]	**Sulfur Recovery Units** Proposed Amended Rule 468 will update SOx emission limits to reflect Best Available Retrofit Control Technology, if needed, remove exemptions for RECLAIM facilities, and update monitoring, reporting, and recordkeeping requirements. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT
469[#]	**Sulfuric Acid Units** Proposed Amended Rule 469 will update SOx emission limits to reflect Best Available Retrofit Control Technology, if needed, remove exemptions for RECLAIM facilities, and update monitoring, reporting, and recordkeeping requirements. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT

* *Potentially significant hearing*

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2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
1101#	**Secondary Lead Smelters/Sulfur Oxides** Proposed Amended Rule 1101 will update SOx emission limits to reflect Best Available Retrofit Control Technology, if needed, remove exemptions for RECLAIM facilities, and update monitoring, reporting, and recordkeeping requirements. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT
1105#	**Fluid Catalytic Cracking Units SOx** Proposed Amended Rule 1105 will update SOx emission limits to reflect Best Available Retrofit Control Technology, if needed, remove exemptions for RECLAIM facilities, and update monitoring, reporting, and recordkeeping requirements. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT/ AB 617 CERP
1111	**Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces** Proposed amendments may be needed to address implementation issues. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP
1111.1	**Zero-Emission Residential Furnaces** Proposed Rule 1111.1 may include provisions to encourage zero emission residential furnaces that goes beyond Rule 1111 for gas-fired furnaces. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP
1113	**Architectural Coatings** Proposed amendments may be needed to clarify applicability of the rule with respect to distribution. *Dave DeBoer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1119#	**Petroleum Coke Calcining Operations – Oxides of Sulfur** Proposed Amended Rule 1119 will update SOx emission limits to reflect Best Available Retrofit Control Technology, if needed, remove exemptions for RECLAIM facilities, and update monitoring, reporting, and recordkeeping requirements. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AB 617 BARCT/ AB 617 CERP
1121*	**Control of Nitrogen Oxides from Residential Type, Natural-Gas-Fired Water Heaters** Proposed amendments may be needed further reduce NOx emissions from water heaters. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP

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2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
1121.1	**Zero Emission Residential Water Heaters** Proposed Rule 1121.1 may include provisions to encourage zero emission water heaters that goes beyond Rule 1121 for gas-fired water heaters. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP
1133.3	**Emission Reductions from Greenwaste Composting Operations** Proposed Amended Rule 1133.3 will seek additional VOCs and ammonia emission reductions from greenwaste and foodwaste composting. Proposed amendments will implement BCM-10 in the 2016 AQMP. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP
1138	**Control of Emissions from Restaurant Operations** Proposed Amended Rule 1138 will further reduce emissions from char boilers. *Tracy Goss 909.396.3106; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	AQMP
1142	**Marine Tank Vessel Operations** Proposed Amended Rule 1142 will address VOC and hydrogen sulfide emissions from marine tank vessel operations, applicability, noticing requirements, and provide clarifications. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1146	**Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters** Proposed amendments to Rule 1146 may be needed to incorporate comments from U.S. EPA. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1146.1[#]	**Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters** Proposed amendments to Rule 1146.1 may be needed to clarify provisions for industry-specific categories and to incorporate comments from U.S. EPA. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other

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2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
1148.1*	**Oil and Gas Production Wells** Proposed Amendments to Rule 1148.1 may be needed to further reduce emissions from operations, implement early leak detection, odor minimization plans, and enhanced emissions and chemical reporting from oil and drilling sites consistent with the AB 617 Community Emission Reduction Plan. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other/ AB 617 CERP
1148.2	**Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers** Proposed amendments to Rule 1148.2 may be needed to improve notifications of well working activities to the community and to address other issues. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other/ AB 617 CERP
1166	**Volatile Organic Compound Emissions from Decontamination of Soil** Proposed Amended Rule 1166 will update requirements, specifically concerning notifications and usage of mitigation plans (site specific versus various locations). *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1168	**Adhesive and Sealant Applications** Staff is considering possible amendments for foam insulation applications. Other amendments may also be needed**.** *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1176	**VOC Emissions from Wastewater Systems** Proposed Amended Rule 1176 will clarify the applicability of the rule to include bulk terminals under definition of "Industrial Facilities," and streamline and clarify provisions. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other/ AB 617 CERP

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2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
1180	**Refinery Fenceline and Community Air Monitoring** Amendments to Rule 1180 may be needed to provide additional clarity and if Proposed Rule 1180.1 is adopted, provisions may be needed to provide additional clarity. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1180.1	**Fenceline and Community Monitoring** Proposed Rule 1180.1 may establish fenceline and community monitoring requirements for non-petroleum refineries and facilities that are not currently included in Rule 1180 – Refinery Fenceline and Community Air Monitoring. *Michael Krause 909.396.2706; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1403*	**Asbestos Emissions from Demolition/Renovation Activities** Proposed Amended Rule 1403 will enhance implementation, improve rule enforceability, update provisions, notifications, exemptions, and align provisions with the applicable U.S. EPA National Emission Standard for Hazardous Air Pollutants (NESHAP) and other state and local requirements as necessary. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1404	**Hexavalent Chromium Emissions from Cooling Towers** Amendments may be needed to provide additional clarifications to use of process water that is associated with sources that have the potential to contain chromium in cooling towers. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1405	**Control of Ethylene Oxide and Chlorofluorocarbon Emissions from Sterilization or Fumigation Processes** Amendments may be needed to address ethylene oxide emissions from sterilization of medical equipment. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1415 1415.1	**Reduction of Refrigerant Emissions from Stationary Air Conditioning Systems, and Reduction of Refrigerant Emissions from Stationary Refrigeration Systems** Proposed Amended Rules 1415 and 1415.1 will align requirements with the proposed CARB Refrigerant Management Program and U.S. EPA's Significant New Alternatives Policy Rule provisions relative to prohibitions on specific hydrofluorocarbons. *David De Boer 909.396.2329; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other

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2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
1420	**Emissions Standard for Lead** Proposed Amended Rule 1420 will update requirements to address arsenic emissions to close a regulatory gap between Rule 1420 and Rule 1407 - Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Melting Operations. Other provisions may be needed to address storage and handling requirements, and revise closure requirements. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1420.1	**Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities** Proposed Amendments are needed to update applicable test methods and provide clarifications regarding submittal of a source-test protocol. Additional amendments may be needed to address monitoring and post closure requirements. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1420.2	**Emission Standards for Lead from Metal Melting Facilities** Proposed Amended Rule 1420.2 will update requirements to address arsenic emissions to close a regulatory gap between Rule 1420 and Rule 1407 - Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Melting Operations. Additional amendments may be needed to address monitoring and post closure requirements. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1421	**Control of Perchloroethylene Emissions from Dry Cleaning Systems** Proposed amendments may be needed to address implementation issues. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1450*	**Control of Methylene Chloride Emissions** Proposed Rule 1450 will reduce methylene chloride emissions from furniture stripping and establish monitoring, reporting, and recordkeeping requirements. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; and Socio: Ian MacMillan 909.396.3244*	Toxics
1455	**Control of Hexavalent Chromium Emissions from Torch Cutting and Welding** Proposed Rule 1455 will establish requirements to reduce hexavalent chromium emissions from torch cutting and welding of chromium alloys. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics

* *Potentially significant hearing*

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2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
1460	**Control of Particulate Emissions from Metal Cutting and Shredding Operations** Proposed Rule 1460 will establish housekeeping and best management practices to minimize fugitive particulate emissions from metal cutting and shredding operations. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
1466.1	**Control of Particulate Emissions from Demolition of Buildings and Structures with Equipment and Processes with Metal Toxic Air Contaminants** Proposed Rule 1466.1 would establish requirements to minimize PM emissions during the demolition of buildings that housed equipment and processes with metal toxic air contaminants and pollution control equipment. *TBD; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1472	**Requirements for Facilities with Multiple Stationary Emergency Standby Diesel-Fueled Internal Combustion Engines** Proposed Amended Rule 1472 will remove provisions that are no longer applicable, update and streamline provisions to reflect the 2015 Health Risk Assessment Guidelines, and assess the need for a Compliance Plans. *Michael Morris 909.396.3282; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Toxics
1480	**Toxics Monitoring** Proposed amendments to Rule 1480 may be needed to remove fee provisions if they are incorporated in Regulation III. *Jillian Wong 909.396.3176; CEQA: Jillian Wong 909.396.3176 and Socio: Ian MacMillan 909.396.3244*	Toxics/ AB 617 CERP
2202*	**On-Road Motor Vehicle Mitigation Options** Proposed Amended Rule 2202 will streamline implementation for regulated entities, as well as reduce review and administration time for South Coast AQMD staff. Concepts may include program components to facilitate achieving average vehicle ridership (AVR) targets. *Carol Gomez 909.396.3264; CEQA: Jillian Wong 909.396.3176; Socio: Ian MacMillan 909.396.3244*	Other
Regulation XXIII*+	**Facility-Based Mobile Sources** Proposed rules within Regulation XXIII would reduce emissions from indirect sources (e.g., mobile sources that visit facilities). *Ian MacMillan 909.396.3244; CEQA: Jillian Wong 909.396.3176 Socio: Ian MacMillan 909.396.3244*	AQMP/ Toxics/ AB 617 CERP

* *Potentially significant hearing*

+ *Reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

Part of the transition of RECLAIM to a command-and-control regulatory structure

2021 To-Be-Determined *(Continued)*

2021	Title and Description	Type of Rulemaking
Regulation II, III, IV, XIV, XI, XIX, XXIII, XXIV, XXX and XXXV	Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA's 2015 revised risk assessment guidance, changes from OEHHA to new or revised toxic air contaminants or their risk values, address variance issues, emission limits, technology-forcing emission limits, conflicts with other agency requirements, to abate a substantial endangerment to public health, additional reductions to meet SIP short-term measure commitments, to address issues raised by U.S. EPA or CARB for the SIP, compliance issues that are raised by the Hearing Board, or regulatory amendments needed as a result of the COVID-19 pandemic. Amendments to existing rules may be needed to address use of materials that contain chemicals of concern. The associated rule development or amendments include, but are not limited to, South Coast AQMD existing, or new rules to implement the 2012 or 2016 AQMP measures. This includes measures in the 2016 AQMP to reduce toxic air contaminants or reduce exposure to air toxics from stationary, mobile, and area sources. Rule adoption or amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures, or U.S. EPA's National Emission Standards for Hazardous Air Pollutants. Rule adoption or amendments may be needed to implement AB 617 including but not limited to BARCT rules, Community Emission Reduction Plans prepared pursuant to AB 617, or new or amended rules to abate a public health issue identified through emissions testing or ambient monitoring.	Other/ AQMP/ Toxics/ AB 617 BARCT/ AB 617 CERP

* *Potentially significant hearing*

[+] *Reduce criteria air contaminants and assist toward attainment of ambient air quality standards*

[#] *Part of the transition of RECLAIM to a command-and-control regulatory structure*

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 18

PROPOSAL: Report of RFQs Scheduled for Release in March

SYNOPSIS: This report summarizes the RFQs for budgeted services over $100,000 scheduled to be released for advertisement for the month of March.

COMMITTEE: Administrative, February 12, 2021, Reviewed

RECOMMENDED ACTION:
Approve the release of RFQs for the month of March.

Wayne Nastri
Executive Officer

SJ:tm

Background
At its January 10, 2020 meeting, the Board approved a revised Procurement Policy and Procedure. Under the revised policy, RFQs for budgeted items over $100,000, which follow the Procurement Policy and Procedure, no longer require individual Board approval. However, a monthly report of all RFQs over $100,000 is included as part of the Board agenda package and the Board may, if desired, take individual action on any item. The report provides the title and synopsis of the RFQ, the budgeted funds available, and the name of the Deputy Executive Officer/Asst. Deputy Executive Officer responsible for that item. Further detail including closing dates, contact information, and detailed proposal criteria will be available online at http://www.aqmd.gov/grants-bids following Board approval on March 5, 2021.

Outreach
In accordance with South Coast AQMD's Procurement Policy and Procedure, a public notice advertising the RFQs 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 South Coast AQMD's own electronic listing of certified minority vendors. Notice of the RFQs will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations and placed on South Coast AQMD's website (http://www.aqmd.gov), where it can be viewed by making the selection "Grants & Bids."

Proposal Evaluation
Proposals received will be evaluated by applicable diverse panels of technically-qualified individuals familiar with the subject matter of the project or equipment and may include outside public sector or academic community expertise.

Attachment
Report of RFQs Scheduled for Release in March 2021

March 5, 2021 Board Meeting
Report on RFQs Scheduled for Release on March 5, 2021

(For detailed information visit SCAQMD's website at http://www.aqmd.gov/nav/grants-bids following Board approval on March 5, 2021)

STANDARDIZED SERVICES

RFQ #Q2021-05	Release RFQ for Janitorial Products South Coast AQMD intends to purchase Green Seal certified janitorial supplies from a list of prequalified vendors for a period of three years. Funds for the first year purchases are available in the FY 2021-22 Budget, and will be requested for the subsequent fiscal years.	OLVERA/2309

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 19

REPORT: FY 2020-21 Contract Activity

SYNOPSIS: This report lists the number of contracts let during the first six months of FY 2020-21, the respective dollar amounts, award type, and the authorized contract signatory for the South Coast AQMD.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

SJ:DH:EA:tm

Background
The Board's Procurement Policy and Procedures requires staff to provide 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 miscellaneous lease agreements that generate revenue, e.g., lease of South Coast AQMD office space;
3) **Sponsorships** – contracts funding public events and technical conferences which provide air quality related benefits;
4) **Modifications** – amendments to existing contracts usually reflecting changes in the project scope and/or schedule; and
5) **Terminated Contracts** – Partial/No Work Performed – modifications to contracts to reflect termination of a portion or all work which result in de-obligation of 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
The total value of all contracts and contract modifications for this period (the first six months of FY 2020-21) was $113,897,578.11, with 141 contracts and contract modifications totaling $112,122,789.50 (98%) approved by the Board and 178 contracts and contract modifications totaling $1,968,160.61(2%) approved by the Executive Officer. This does not include modifications for termination with partial or no work completed. Table 1 is a summary of the 332 contracts and modifications (including terminations and the associated amount of de-obligated funding) issued during this period.

Table 1: Contracts, Modifications and Amounts (including terminations)

CONTRACT CATEGORY	NUMBER	AMOUNT
NEW AWARDS	121	$83,538,024.50
OTHER	27	$878,030.00
SPONSORSHIPS	8	$157,500.00
MODIFICATIONS	163	$29,324,023.61
TERMINATIONS	13	-$8,454,383.00
TOTAL	**332**	**$105,443,195.11**

Of the total value for New Awards of $83,538,024.50, $74,845,278.00 (90%) was awarded through the competitive process. As shown in Table 2, contracts totaling $1,968,160.61 were approved by the Executive Officer.

Table 2: Contracts Approved by Executive Officer

Contract Description	CONTRACT AMOUNT
Board Member Assistant contracts and contract modifications, as approved by the Board's Administrative Committee	$878,030.00
Technical consulting	$82,000.00
Contract modifications for extensions of time or additional budgeted services from previously approved vendors	$749,258.61
Sponsorships in advanced technologies and community and business outreach	$147,500.00
Miscellaneous services including the software licenses	$61,372.00
Legal services	$50,000.00
Total	**$1,968,160.61**

Attachment
Contract Activity Report for the period July 1, 2020 through December 31, 2020.

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
I. NEW AWARDS							
Competitive - Board Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19444	77	PROP 1B TRUCK REPLACEMENT PROGRAM	LINCOLN TRANSPORATION SERVICES INC.	$2,500,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C19462	27,37	MULTIFAMILY AFFORDABLE HOUSING ELECTRIFICATION PROJECT	ASSOCIATION FOR ENERGY AFFORDABILITY INC	$7,740,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20072		MOA FOR SCHOOL ACCESS FOR AIR FILTRATION INSTALLATION	COMPTON UNIFIED SCHOOL DISTRICT	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20165	80	REPOWER OF 8 OFF-ROAD VEHICLES - OPERATION ONLY	MESA GENERAL ENGINEERING INC	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20166	80	REPOWER OF 2 OFF-ROAD VEHICLES - OPERATION ONLY	MCMINN EQUIPMENT RENTAL & LEASING, INC.	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20179	77	REPLACEMENT OF 1 TIER 2 SWITCHER LOCOMOTIVE WITH A TIER 4 SWITCHER LOCOMOTIVE	METROPOLITAN STEVEDORE COMPANY	$1,243,280.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20198	77	CONSTRUCTION AND OPERATION OF 1 NEW BATTERY CHARGING STATION WITH 6 CHARGERS	A-Z BUS SALES, INC.	$75,864.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20202	77	REPLACEMENT OF 4 OFF-ROAD EQUIPMENT	SUN & SANDS ENTERPRISES, LLC	$644,468.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20218	32	DUAL-ENGINE 2-FOR-1 REPLACEMENT	RENTRAC INC	$438,490.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20223	77	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	ENRIQUE BERRIOZABAL	$160,706.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20237	77	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	HONDO FRAMING, INC	$59,970.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20242	77	REPOWER 2 MAIN ENGINES AND 1 AUXILIARY ENGINE OF A MARINE VESSEL	GREGORY J. KUGLIS	$217,600.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20246	77	REPOWER 1 MAIN ENGINE OF A MARINE VESSEL	MARK PODOLL	$105,600.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20247	77	REPOWER 2 MAIN ENGINES OF A MARINE VESSEL	OPTIONS SPORTFISHING	$163,591.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20251	77	REPLACEMENT OF 2 OFF-ROAD EQUIPMENT	WEST COAST TURF	$128,654.00	

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20254	77	REPOWER 2 MAIN ENGINES OF A MARINE VESSEL	LAUREN ALTHAUS	$480,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20257	32	REPLACEMENT OF 3 OFF-ROAD EQUIPMENT	PRO-ORGANIC FARMS LLC	$1,192,367.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20259	32,77	REPLACEMENT OF 4 OFF-ROAD EQUIPMENT	USA WASTE OF CALIFORNIA INC	$360,046.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20260	32	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	MICHAEL DE HOOG DAIRY, LP	$61,600.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20261	32	REPLACEMENT OF 4 OFF-ROAD EQUIPMENT	GH DAIRY	$384,634.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20263	77	REPOWER 1 MAIN ENGINE OF A MARINE VESSEL	GIOI TRAN	$124,284.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20265	31	TECHNICAL ASSISTANCE WITH HEAVY-DUTY VEHICLE EMISSIONS TESTING, ANALYSES AND ENGINE DEVELOPMENT & APPLICATIONS	EASTERN RESEARCH GROUP, INC.	$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20266	77	REPOWER 2 MAIN ENGINES ON A MARINE VESSEL	EUGENE JAY KOMROSKY	$189,600.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20275	32	REPLACEMENT OF 2 OFF-ROAD EQUIPMENT	ORGANIC DEPOT LLC	$1,925,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20277	77	REPLACEMENT OF 1 OFF-ROAD RAIL SHUTTLEWAGON	ARDENT MILLS, LLC	$246,079.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20278	77	REPOWER 5 MAIN AND 2 AUXILIARY ENGINES OF TWO MARINE VESSELS	AMERICAN MARINE CORP	$1,477,600.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20279	77	REPLACEMENT OF 9 OFF-ROAD AGRICULTURAL EQUIPMENT	HADLEY DATE GARDENS, INC	$707,314.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20283	77	REPOWER 2 MAIN ENGINES OF A MARINE VESSEL	SAN PEDRO PRIDE INC	$360,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20289	32	REPLACEMENT OF AN OLDER OFF-ROAD HEAVY-DUTY EQUIPMENT	PRADO RECREATION INC	$8,865.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20290	77	REPLACEMENT OF 10 OFF-ROAD EQUIPMENT	TOTAL TERMINALS INTERNATIONAL, LLC	$4,285,901.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20292	77	REPOWER 2 MAIN ENGINES OF A MARINE VESSEL	WYATT STAEHLING	$136,000.00	

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20293	77	REPOWER 2 MAIN ENGINES AND 2 AUXILIARY ENGINES ON A MARINE VESSEL	MOUNTAIN AND SEA EDUCATIONAL ADVENTURES	$718,400.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20295	77	REPLACEMENT OF 24 ZERO-EMISSION OFF-ROAD EQUIPMENT	CAL CARTAGE WAREHOUSE & TRANSLOADING LLC	$349,845.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20297	77	REPOWER 4 OFF-ROAD EQUIPMENT	FENIX MARINE SERVICES LTD	$983,569.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20299	32	REPLACEMENT OF 2 OFF-ROAD EQUIPMENT	QUALITY TURF INC	$108,022.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20300	77	REPLACEMENT OF 3 OFF-ROAD EQUIPMENT	PICK YOUR PART AUTO WRECKING	$264,797.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20301	77	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	LA QUINTA DATE GROWERS, L.P.	$119,190.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20302	77,32	REPLACEMENT OF 8 OFF-ROAD EQUIPMENT	LUCKY FARMS, LLC	$779,546.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20303	77	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	LATIN LADY RANCH LLC	$104,477.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20304	32	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	EMERALD ACRES LLC	$1,220,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20305	77	REPLACEMENT OF 5 OFF-ROAD EQUIPMENT	TK CONSTRUCTION	$233,297.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20306	77	CONSTRUCTION OF 1 NEW BATTERY CHARGING STATION	UNIVERSAL CITY STUDIOS	$1,513,745.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20308	32	REPLACEMENT OF 3 OFF-ROAD EQUIPMENT	JORGE FUENTES TRUCKING	$322,973.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20317	77	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	POST BROTHERS CONSTRUCTION	$388,343.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20319	77	REPLACEMENT OF 3 OFF-ROAD EQUIPMENT	KLM INC	$493,686.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20320	77	REPLACEMENT OF 4 OFF-ROAD EQUIPMENT	VULCAN MATERIALS COMPANY	$2,597,863.00	

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20321	32	REPLACEMENT OF 10 (INCLUDING SIX (6) DUAL-ENGINE (2-FOR-1), 2 DUAL-ENGINE TO SINGLE-ENGINE AND 2 SINGLE-ENGINE) OFF-ROAD EQUIPMENT AND THE REPOWER OF 6 DUAL-ENGINE OFF-ROAD EQUIPMENT	COBURN EQUIPMENT	$7,401,363.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20324	77	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	THE J.V. LAND CLEARING COMPANY, INC	$360,450.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20330	77,81	REPLACEMENT OF 102 HEAVY-DUTY TRUCKS	NATIONAL READY MIXED CONCRETE CO.	$10,200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20332	77,81	PROP 1B TRUCK REPLACEMENT PROGRAM	PACIFIC GREEN TRUCKING INC	$3,900,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20336	32	REPOWER 2 MAIN ENGINES AND 1 AUXILIARY ENGINE OF A MARINE VESSEL - OPERATION ONLY	OCEAN ANGEL XI, LLC	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20338	77	REPLACEMENT OF 1 ON-ROAD EQUIPMENT	LUC THAN	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20339	77	REPLACEMENT OF 1 ON-ROAD EQUIPMENT	SEUNG JO KWAK	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20340	77	REPOWER 2 MAIN ENGINES OF A MARINE VESSEL	KAMRYN DAWSON CHARTERS INC	$265,600.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20341	77	REPLACEMENT OF 1 ON-ROAD EQUIPMENT	KYUNG S S CHUNG	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20344	77	REPOWER 2 MAIN ENGINES ON A MARINE VESSEL	ALEXES SPORTS FISHING LLC	$206,400.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20349	32	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	GREGORY ANDERSON	$58,535.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20351	77	REPLACEMENT OF 2 OFF-ROAD EQUIPMENT	GATEWAY CONCRETE, INC	$66,036.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20352	77	REPLACEMENT OF 18 ON-ROAD VEHICLES	CITY OF LONG BEACH	$1,145,003.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20356	81	PROP 1B TRUCK REPLACEMENT PROGRAM	UNIQUE FREIGHT TRANSPORT, INC	$800,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21025	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PRICE TRANSFER, INC.	$200,000.00	

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21026	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MILTON CASTELLANOS	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21027	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUBEN VIEYRA	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21030	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS ORTIZ	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21032	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE A FLORES	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21033	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARTIN H. KARAM	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21034	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUSTO DOLORES	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21038	77	REPLACEMENT OF 3 OFF-ROAD EQUIPMENT	SUPRA NATIONAL EXPRESS INC.	$291,500.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21039	54	MAP PROGRAM - APPROVED DEALERSHIP	RUSH TRUCK CENTERS OF CALIFORNIA, INC	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21040	54	MAP PROGRAM - APPROVED DEALERSHIP	INLAND KENWORTH (US) INC	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21044	81	PROP 1B TRUCK REPLACEMENT PROGRAM	YOUNGIN BOB KIM	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21046	54	MAP PROGRAM - APPROVED DEALERSHIP	TEC OF CALIFORNIA, INC.	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21047	77	REPLACEMENT OF 1 ON-ROAD EQUIPMENT	VICTOR KI CHOI	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21051	77	CONSTRUCTION AND OPERATION OF 6 NEW RNG FILLING STATIONS	NATIONAL READY MIXED CONCRETE CO.	$4,389,763.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21052	54	MAP PROGRAM - APPROVED DEALERSHIP	VELOCITY TRUCK CENTERS	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21053	77	REPLACEMENT OF 8 ON-ROAD EQUIPMENT	WASTE MANAGEMENT COLLECTION & RECYCLING	$401,758.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21056	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ATLAS MARINE	$300,000.00	

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21080	32	REPLACEMENT OF 7 OFF-ROAD EQUIPMENT	C.A. RASMUSSEN, INC	$1,168,487.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21081	32	REPLACEMENT OF 2 OFF-ROAD EQUIPMENT	UNIVERSITY OF CALIFORNIA RIVERSIDE	$122,212.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21082	75	MOA FOR SCHOOL ACCESS FOR AIR FILTRATION INSTALLATION	POMONA UNIFIED SCHOOL DISTRICT	$0.00	1
01	ADMINISTRATIVE & HUMAN RESOURCESES	C21088	01	EMPLOYMENT AND LABOR RELATIONS LEGAL SERVICES	ATKINSON, ANDELSON, LOYA, RUUD & ROMO	$30,000.00	
01	ADMINISTRATIVE & HUMAN RESOURCESES	C21089	01	EMPLOYEE AND LABOR RELATIONS LEGAL SERVICES	LIEBERT CASSIDY WHITMORE	$120,000.00	
17	CLERK OF THE BOARDS	C21094	01	LEGAL REPRESENTATION FOR THE HEARING BOARD	STRUMWASSER & WOOCHER LLP	$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21117	81	PROP 1B TRUCK REPLACEMENT PROGRAM	Y2K ENTERPRISES INC	$3,500,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21131	77	CONSTRUCTION AND OPERATION OF 2 NEW RNG FILLING STATIONS	CR&R INCORPORATED	$1,417,037.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21140	31	TDP PROGRAM - APPROVED DEALERSHIP	INLAND KENWORTH (US) INC	$0.00	1
35	LEGISLATIVE & PUBLIC AFFAIRS	C21171	01	LEGISLATIVE REPRESENTATION IN SACRAMENTO	CALIFORNIA ADVISORS LLC	$142,080.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C21172	01	LEGISLATIVE REPRESENTATION IN SACRAMENTO	JOE A GONSALVES & SON	$143,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G20171	80	REPLACEMENT OF 5 CNG FUEL TANKS ON SCHOOL BUSES	MONTEBELLO UNIFIED SCHOOL DISTRICT	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G20188	80	REPLACEMENT OF 1 CNG FUEL TANK ON A SCHOOL BUS	NORWALK-LA MIRADA UNIFIED SCHOOL DIST	$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G20286	80	REPLACEMENT OF 3 CNG FUEL TANKS ON SCHOOL BUSES	FONTANA UNIFIED SCHOOL DISTRICT	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G20310	80	REPLACEMENT OF 3 CNG FUEL TANKS ON SCHOOL BUSES	BONITA UNIFIED SCHOOL DISTRICT	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G20328	80	REPLACEMENT OF 10 CNG FUEL TANKS ON SCHOOL BUSES	HEMET UNIFIED SCHOOL DISTRICT	$200,000.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G21054	80	REPLACEMENT OF 3 CNG FUEL TANKS ON SCHOOL BUSES	JURUPA UNIFIED SCHOOL DISTRICT	$60,000.00	
44	MSRC	ML18100	23	INSTALL 13 EV CHARGING STATIONS	CITY OF BREA	$56,500.00	
44	MSRC	ML18151	23	PROCURE 1 LIGHT-DUTY ZEV AND INSTALL EV CHARGING STATION	SAN BERNARDINO COUNTY	$200,000.00	
44	MSRC	ML18152	23	PURCHASE 5 HEAVY-DUTY NEAR-ZERO EMISSION VEHICLES	SAN BERNARDINO COUNTY	$108,990.00	
44	MSRC	MS21003	23	IMPLEMENT SPECIAL BUS SERVICE TO THE ORANGE COUNTY FAIR	ORANGE CO TRANSPORTATION AUTHORITY	$468,298.00	
					Subtotal	**$74,773,278.00**	
Competitive-Executive Officer Approved							
16	ADMINISTRATIVE & HUMAN RESOURCES	C20335	01	DEFERRED COMPENSATION PLAN CONSULTANT SERVICE	BENEFIT FINANCIAL SERVICES GROUP	$72,000.00	
					Subtotal	**$72,000.00**	
Sole Source - Board Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19313	31	CONSTRUCT AND OPERATE RENEWABLE HYDROGEN REFUELING STATION	EQUILON ENTERPRISES LLC	$1,200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19464	17	BATTERY ELECTRIC YARD TRACTOR REPLACEMENT PROJECT	WEST BASIN CONTAINER TERMINAL LLC	$2,100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20092	31	NATURAL GAS ENGINE AND VEHICLES RESEARCH AND DEVELOPMENT PENT-ROOF MD NG ENGINE	SOUTHWEST RESEARCH INSTITUTE	$475,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20108	31	DEVELOP OPTIMAL OPERATION MODEL FOR RENEWABLE ELECTROLYTIC FUEL PRODUCTION	UNIVERSITY OF CALIFORNIA - IRVINE	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20140	83	DEVELOP AND DEMONSTRATE WATER-IN-FUEL RETROFIT TECHNOLOGY FOR OCEAN-GOING VESSELS	MAN ENERGY SOLUTIONS USA INC.	$3,000,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20158	31	ONBOARD NOX AND PM MEASUREMENT METHOD	UNIVERSITY OF CALIFORNIA RIVERSIDE	$201,087.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20193	75	INSTALLATION AND MAINTENANCE OF AIR FILTRATION SYSTEMS AT SCHOOLS	IQAIR NORTH AMERICA, INC.	$119,700.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20225	67	PERFORM DATA COLLECTION, ANALYSIS AND REPORTING FOR CARB'S ZANZEFF PROJECT	CALSTART, INC	$260,400.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20316	31	NATURAL GAS ENGINE AND VEHICLES RESEARCH AND DEVELOPMENT - PLUG-IN HYBRID CNG DRAYAGE TRUCK "PHET"	US HYBRID CORPORATION	$500,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C20327	31	AIRBORNE FLUX MEASUREMENT OF VOLATILE ORGANIC COMPOUNDS AND OXIDES OF NITROGEN IN CALIFORNIA	UNIVERSITY OF CALIFORNIA-BERKELEY	$300,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20350	40	CALIFORNIA (IN-STATE) RNG SUPPLY AND CARBON INTENSITY STUDY	GLADSTEIN, NEANDROSS & ASSOCIATES	$10,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21049	75	INSTALL AIR FILTRATON SYSTEMS IN SCHOOLS	IQAIR NORTH AMERICA, INC.	$69,468.75	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21050	75	INSTALL AIR FILTRATION SYSTEMS IN SCHOOLS	IQAIR NORTH AMERICA, INC.	$69,468.75	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21099	31	RENEWABLE NATURAL GAS PRODUCTION & VEHICLE DEMONSTRATION PROJECT	CR&R INCORPORATED	$166,250.00	
					Subtotal	**$8,571,374.50**	

Sole Source - Executive Officer Approved

44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20248	01	ECONOMIC & WORKFORCE IMPACT ANAYSIS OF ELECTRIC REVOLUTION IN SOUTHERN CALIFORNIA	ECONOMIC DEVELOPMENT CORPORATION	$10,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C20331	01	HUMAN RESOURCES WEB-BASED SOFTWARE (NEOGOV)	NEOGOV	$45,588.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20357		ASSIGNMENT AND NOVATION AGREEMENT	GREEN PARADIGM CONSULTING, INC	$0.00	1
35	LEGISLATIVE & PUBLIC AFFAIRS	C21036	01	LICENSE AND SERVICES AGREEMENT FOR WHOVA APP	WHOVA, INC.	$1,999.00	
08	LEGAL	C21090	01	OUTSIDE COUNSEL - CONFLICT OF INTEREST	OLSON REMCHO LLP	$20,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C21149	01	NEXTDOOR SERVICES	NEXTDOOR, INC	$13,785.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
08	LEGAL	C21155	01	OUTSIDE LITIGATION AND REPRESENTATION - ENVIRONMENTAL	BROWNE GEORGE ROSS O'BRIEN ANNAGUEY	$10,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C21161	01	LEGAL SERVICES FOR IMMIGRATION, DIVERSITY AND LABOR & EMPLOYMENT SERVICES	FISHER & PHILLIPS, LLP	$20,000.00	
					Subtotal	**$121,372.00**	

II. OTHER

Board Assistant

Board Administrative Committee Reviewed/Executive Officer Approved

02	GOVERNING BOARD	C21000	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	RUTHANNE TAYLOR BERGER	$74,000.04	
02	GOVERNING BOARD	C21001	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	CITY OF WILDOMAR	$20,871.96	
02	GOVERNING BOARD	C21002	01	BOARD ASSISTANT SERVICES FOR CHAIRMAN DR. WILLIAM BURKE	P & L CONSULTING, LLC	$118,872.00	
02	GOVERNING BOARD	C21003	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	TRICIA ALMIRON	$12,000.00	
02	GOVERNING BOARD	C21004	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	THOMAS ALAN GROSS	$12,000.00	
02	GOVERNING BOARD	C21005	01	BOARD ASSISTANT SERVICES FOR LISA BARTLETT	JAMES DAVID DINWIDDIE III	$44,734.00	
02	GOVERNING BOARD	C21006	01	BOARD ASSISTANT SERVICES FOR V. MANUEL PEREZ	GUILLERMO GONZALEZ	$62,326.00	
02	GOVERNING BOARD	C21007	01	BOARD ASSISTANT SERVICES FOR JOE BUSCAINO	JACOB LEE HAIK	$64,337.00	
02	GOVERNING BOARD	C21008	01	BOARD ASSISTANT SERVICES FOR VANESSA DELGADO	MARIA TERESA ACOSTA	$31,005.50	
02	GOVERNING BOARD	C21009	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	FRANK CARDENAS AND ASSOCIATES	$5,880.00	
02	GOVERNING BOARD	C21010	01	BOARD ASSISTANT SERVICES FOR KATHRYN BARGER	COUNTY OF LOS ANGELES	$39,624.00	
02	GOVERNING BOARD	C21011	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	WILLIAM GLAZIER	$5,880.00	
02	GOVERNING BOARD	C21012	01	BOARD ASSISTANT SERVICES FOR CARLOS RODRIGUEZ	MATTHEW AUGUST HOLDER	$53,781.00	
02	GOVERNING BOARD	C21013	01	BOARD ASSISTANT SERVICES FOR VANESSA DELGADO	SANDRA HERNANDEZ	$16,005.50	
03	GOVERNING BOARD	C21014	01	BOARD ASSISTANT SERVICES FOR LARRY MCCALLON	RONALD KETCHAM	$39,624.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
02	GOVERNING BOARD	C21015	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	FREDRICK MINASSIAN	$53,375.04	
02	GOVERNING BOARD	C21016	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	MARISA KRISTINE PEREZ	$65,496.96	
02	GOVERNING BOARD	C21017	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	TIMOTHY PHILLIP SANDOVAL	$9,300.00	
02	GOVERNING BOARD	C21018	01	BOARD ASSISTANT SERVICES FOR VANESSA DELGADO	CRISTIAN RIESGO	$3,252.00	
02	GOVERNING BOARD	C21019	01	BOARD ASSISTANT SERVICES FOR JANICE RUTHERFORD	ANDREW E SILVA	$30,000.00	
02	GOVERNING BOARD	C21020	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	SHO TAY	$6,000.00	
02	GOVERNING BOARD	C21021	01	BOARD ASSISTANT SERVICES FOR JANICE RUTHERFORD	COUNTY OF SAN BERNARDINO	$34,377.00	
02	GOVERNING BOARD	C21022	01	BOARD ASSISTANT SERVICES FOR GIDEON KRACOV	ROSS BENJAMIN ZELEN	$42,724.00	
02	GOVERNING BOARD	C21023	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	BENJAMIN S WONG	$8,928.00	
02	GOVERNING BOARD	C21024	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	JOSE LUIS ZAVALA	$3,636.00	
02	GOVERNING BOARD	C21154	01	BOARD ASSISTANT SERVICES FOR JANICE RUTHERFORD	DEBRA S MENDELSOHN	$20,000.00	
					Subtotal	**$878,030.00**	
Other - Executive Officer Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20084	01	AIR MONITORING STATION WEST LOS ANGELES	VA GREATER LOS ANGELES HEALTHCARE SYSTEM	$0.00	1
					Subtotal	**$0.00**	
III. SPONSORSHIPS							
Sponsorship - Board Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20353	40	CO-SPONSOR THE 2020 RENEWABLE GAS 360 WEBINAR	GLADSTEIN, NEANDROSS & ASSOCIATES	$10,000.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
					Subtotal	**$10,000.00**	
Sponsorship - Executive Officer Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20348	01	COSPONSOR THE 2021 RENEWABLE GAS 360 SYMPOSIUM	GLADSTEIN, NEANDROSS & ASSOCIATES	$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21078	01	COSPONSOR HIGH POWER CHARGING FOR COMMERCIAL VEHICLES EVENT	CHARGING INTERFACE INITIATIVE E.V.	$12,500.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21079	01	COSPONSOR 2020 ACT VIRTUAL EVENT SERIES	GLADSTEIN, NEANDROSS & ASSOCIATES	$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C21093	01	COSPONSOR 2020 BREATH OF LIFE AWARDS VIRTUAL GALA	BREATHE SOUTHERN CALIFORNIA	$10,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C21095	01	THE REGALETTES "TEEN LEADERSHIP DIGITAL FESTIVAL AND SCHOLARSHIP FUNDRAISER"	REGALETTES, INC.	$5,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C21100	01	2020 CALIFORNIA CLEAN AIR DAY SPONSORSHIP	COALITION FOR CLEAN AIR	$10,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C21165	01	15TH ANNUAL TASTE OF SOUL 2020 VIRTUAL FAMILY FESTIVAL SPONSORSHIP	LOS ANGELES SENTINEL, INC	$50,000.00	
					Subtotal	**$147,500.00**	
IV. MODIFICATIONS							
Board Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17225	67	DEVELOPMENT & DEMONSTRATION OF UP TO 2 CLASS 8 BATTERY ELECTRIC DRAYAGE TRUCKS	VOLVO TECHNOLOGY OF AMERICA LLC	$353,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17310	76	BIOSOLIDS TO TRANSPORTATION FUEL-GRADE RENEWABLE NATURAL GAS (RNG) PRE-COMMERCIALIZATION OPTIMIZATION AND RESEARCH PROJECT	KORE INFRASTRUCTURE, LLC	$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C17363	35	DEVELOPMENT OF REAL-TIME PUBLIC AIR QUALITY ALERT SYSTEM	SONOMA TECHNOLOGY INC	$15,000.00	
27	INFORMATION MANAGEMENT	C18247	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	SIERRA CYBERNETICS INC	$219,790.00	

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
26	PLANNING RULE DEV & AREA SOURCES	C18260	27	RULE 1111 CONSUMER REBATE PROGRAM FOR COMPLIANT NATURAL GAS-FIRED FAN-TYPE CENTRAL FURNACES	ELECTRIC & GAS INDUSTRIES ASSOCIATION	$3,500,000.00	
27	INFORMATION MANAGEMENT	C18288	01	SHORT- AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	VARSUN ETECHNOLOGIES GROUP, INC	$220,000.00	
27	INFORMATION MANAGEMENT	C18292	01	SHORT- AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	PRELUDE SYSTEMS, INC.	$55,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19025	17	COMMERCIAL ELECTRIC LAWN & GARDEN EQUIPMENT INCENTIVE & EXCHANGE PROGRAM IN EJ AREAS	MEAN GREEN PRODUCTS LLC	$113,200.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19078	31	TECHNICAL ASSISTANCE WITH ALT FUELS, EVS, CHARGING AND FUELING INFRASTRUCTURE AND RENEWABLE ENERGY	GREEN PARADIGM CONSULTING, INC	$50,000.00	
27	INFORMATION MANAGEMENT	C19156	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	AGREEYA SOLUTIONS, INC	$65,000.00	
08	LEGAL	C19229	01	LEGAL ADVICE IN RELATION TO LEGISLATIVE AUTHORITY TO ADOPT A SALES TAX	KAUFMAN LEGAL GROUP, A PROFESSIONAL CORP	$15,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C19303	01	CONSULTANT SERVICES FOR SCAQMD ENVIRONMENTAL JUSTICE OUTREACH AND INITIATIVES	LEE ANDREWS GROUP INC	$620,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C19318	27	HIGH EFFICIENCY AND LOW-NOx COMBO RIBBON BURNER COMBUSTION SYSTEM DEMONSTRATION	GAS TECHNOLOGY INSTITUTE	$0.00	6
35	LEGISLATIVE & PUBLIC AFFAIRS	C19338	01	CONSULTANT SERVICES FOR SCAQMD HIGH SCHOOL AIR QUALITY EDUCATIONAL PROGRAM	LEE ANDREWS GROUP INC	$3,000,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19356	77	REPOWER 17 ENGINES OF AGRICULTURAL EQUIPMENT	PEED EQUIPMENT COMPANY	$222,444.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19367	77	REPLACEMENT OF 2 OFF-ROAD AGRICULTURAL EQUIPMENT	UNIVERSITY OF CALIFORNIA RIVERSIDE	$77,847.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19389	32,77	REPLACEMENT 6 OFF-ROAD EQUIPMENT	SA RECYCLING LLC	$1,009,082.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19418	77	REPLACEMENT 7 OFF-ROAD EQUIPMENT	QUALITY TURF INC	$120,415.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19456	77	REPLACEMENT OF 13 OFF-ROAD EQUIPMENT	LONG LIFE FARMS INC.	$340,776.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19469	56	CASE MANAGEMENT AND REMOTE SENSING FOR ENHANCED FLEET MODERNIZATION	OPUS INSPECTION INC	$400,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19470	77	REPOWER 9 OFF-ROAD EQUIPMENT	SUKUT CONSTRUCTION, INC.	$8,339,173.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20187	77	REPLACEMENT OF 6 LINE-HAUL LOCOMOTIVES	BNSF RAILWAY COMPANY	$5,766,750.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20212	77	REPLACEMENT OF 3 OFF-ROAD EQUIPMENT	SA RECYCLING LLC	$309,049.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20218	32	DUAL-ENGINE 2-FOR-1 REPLACEMENT	RENTRAC INC	$2,615,142.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20261	32,80	REPLACEMENT OF 4 OFF-ROAD EQUIPMENT	GH DAIRY	$826,783.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20299	77	REPLACEMENT OF 2 OFF-ROAD EQUIPMENT	QUALITY TURF INC	$256,235.00	
01	ADMINISTRATIVE & HUMAN RESOURCESES	C21089	01	EMPLOYEE AND LABOR RELATIONS LEGAL SERVICES	LIEBERT CASSIDY WHITMORE	$50,000.00	
44	MSRC	MS21002	23	PROVIDE PROGRAMMATIC SERVICES TO THE MSRC	BETTER WORLD GROUP ADVISORS	$15,079.00	
					Subtotal	**$28,574,765.00**	
Executive Officer Approved							
08	LEGAL	C07321	01	ADVICE REGARDING PUBLIC FINANCE BONDS, TAXES, FEES, ETC.	STRADLING YOCCA CARLSON & RAUTH	$10,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09422	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	TOM'S TRUCK CENTER, INC.	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09423	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	INLAND KENWORTH (US) INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09424	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	LOS ANGELES FREIGHTLINER	$0.00	6

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09425	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	RUSH TRUCK CENTERS OF CALIFORNIA, INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09426	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	WESTRUX INTERNATIONAL, INC.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09430	59	SCAQMD APPROVED PARTICIPATING DISMANTLER IN VOUCHER INCENTIVE PROGRAM	PICK YOUR PART AUTO WRECKING	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09432	59	SCAQMD APPROVED PARTICIPATING DISMANTLER IN VOUCHER INCENTIVE PROGRAM	DICK'S AUTO WRECKERS	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10006	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	TEC OF CALIFORNIA, INC.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10463	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	BOERNER TRUCK CENTER	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10464	32	REPOWER ONE 1 DIESEL WATERPULL, 1 DIESEL CRAWLER TRACTOR, 1 DIESEL GRADER, AND 9 DIESEL SCRAPERS	LEE & STIRES INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11160	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	ENTERPRISE MOTORS, INC.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11161	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN THE VOUCHER INCENTIVE PROGRAM	TOM'S TRUCK CENTER, INC.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12041	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	KDH USED TRUCK SALES	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12042	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	ARROW TRUCK SALES	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12044	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	TRANSPORTATION COMMERCE INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12046	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	GIBBS INTERNATIONAL INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12050	59	SCAQMD APPROVED PARTICIPATING DISMANTLER IN VOUCHER INCENTIVE PROGRAM	AMERICAN METAL RECYCLING	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13029	32	REPOWER 1 MAIN AND 3 AUXILIARY ENGINES ON A MARINE VESSEL	OCEAN ANGEL VI. LLC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13069	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	C&M MOTORS, INC	$0.00	6

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13077	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	PENSKE CHVROLET OF CERRITOS	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14140	32	REPOWER 2 OFF-ROAD CRANES	SHORING ENGINEERS	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14375	01	DATA COLLECTION & ANALYSIS OF ZERO-EMISSION CARGO TRANSPORTATION DEMONSTRATION	NATIONAL RENEWABLE ENERGY LAB	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14375	01	DATA COLLECTION & ANALYSIS OF ZERO-EMISSION CARGO TRANSPORTATION DEMONSTRATION	NATIONAL RENEWABLE ENERGY LAB	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15479	32	REPLACEMENT OF 7 OFF-ROAD VEHICLES	BOOTSMA SILVA FARMS	$0.00	4
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15635	61	DEVELOPMENT AND DEMONSTRATION OF ZERO-EMISSION FUEL CELL RANGE EXTENDED ELECTRIC DRAYAGE TRUCK AND GOODS MOVEMENT OPERATIONS BETWEEN THE PORTS OF LOS ANGELES AND LONG BEACH AND THE NEAR DOCK RAIL YARDS AND WAREHOUSES	CENTER FOR TRANSPORTATION AND	$0.00	6
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	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C16037	01	INSURANCE CONSULTANT/BROKERAGE SERVICES	ALLIANT INSURANCE SERVICES INC	$74,000.00	
08	LEGAL	C16042	01	PROVIDE LEGAL SERVICES IN CONNECTION WITH DEVELOPING AND IMPLEMENTING LEGAL STRATEGY FOR RECLAIM RULE	ARNOLD & PORTER KAYE SCHOLER LLP	$0.00	6
08	LEGAL	C16063	01	SPECIALIZED LEGAL SERVICES	HOGAN LOVELLS US LLP	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17029	31	DEMONSTRATION AND EVALUATION OF PLUG-IN SMART CHARGING AT MULTIPLE ELECTRIC GRID SCALES	UNIVERSITY OF CALIFORNIA - IRVINE	$0.00	

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17114	01	APPLICATION OF NEXT GENERATION AIR MONITORING METHODS TO CHARACTERIZE HAZARDOUS AIR POLLUTANT EMISSIONS FROM REFINERIES AND ASSESS POTENTIAL IMPACTS TO SURROUNDING COMMUNITIES	FLUXSENSE AB	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17127	32	REPOWER OF 2 MAIN ENGINES OF A MARINE VESSEL	CATALINA CLASSIC CRUISES	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17186	01	ENGAGE, EDUCATE, AND EMPOWER CALIFORNIA COMMUNITIES ON THE USE AND APPLICATIONS OF LOW-COST AIR MONITORING SENSORS	SONOMA TECHNOLOGY INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17203	01	ENGAGE, EDUCATE, AND EMPOWER CALIFORNIA COMMUNITIES ON THE USE AND APPLICATIONS OF "LOW-COST" AIR MONITORING SENSORS	UNIVERSITY OF CALIFORNIA-LOS ANGELES	$0.00	6
04	FINANCE	C17213	01	PROVIDE INVESTMENT CONSULTING SERVICES TO SCAQMD	PFM ASSET MANAGEMENT LLC	$23,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17276	31	DEVELOPMENT OF ECO-ITS STRATEGIES FOR CARGO CONTAINERS	UNIVERSITY OF CALIFORNIA RIVERSIDE	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17353	31	DEVELOP AND DEMONSTRATE MEDIUM-HEAVY DUTY (CLASS 5-7) PLUG-IN HYBRD ELECTRIC VEHICLES FOR WORK TRUCK APPLICATIONS	ODYNE SYSTEMS, LLC	$0.00	6
08	LEGAL	C17407	01	LEGAL ADVICE REGARDING THE CALIFORNIA COASTAL ACT AND RELATED MATTERS AS WELL AS REPRESENTATION OF THE SCAQMD BEFORE THE CALIFORNIA COASTAL COMMISSION	GAINES & STACEY, LLP	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C18021	01	WEST INLAND EMPIRE EMPLOYMENT RELATIONS CONSORTIUM	LIEBERT CASSIDY WHITMORE	$3,875.00	
17	CLERK OF THE BOARDS	C18024	01	LEGAL REPRESENTATION FOR THE HEARING BOARD	STRUMWASSER & WOOCHER LLP	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18041	59	SCAQMD APPROVED PARTICIPATING DISMANTLER IN VOUCHER INCENTIVE PROGRAM	JAPANESE UNIQUE TRUCKS	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18042	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	PORTSIDE USED TRUCK SALES INC	$0.00	6

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18067	56	APPROVED DISMANTLER IN EFMP	SA RECYCLING LLC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18075	01	LEASE 2 CHEVROLET BOLTS	SELMAN CHEVROLET COMPANY	$1,355.84	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18075	01	LEASE 2 CHEVROLET BOLTS	SELMAN CHEVROLET COMPANY	$1,355.84	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18075	01	LEASE 2 CHEVROLET BOLTS	SELMAN CHEVROLET COMPANY	$1,355.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C18085	01	INSURANCE BROKERAGE SERVICES	ALLIANT INSURANCE SERVICES INC	$50,980.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18129	31	VERSATILE PLUG-IN AUXILIARY POWER SYSTEM DEMONSTRATION	EPRI	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C18146	01	CSAC-EIA JOINT POWERS AGREEMENT	CSAC EXCESS INSURANCE AUTHORITY	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C18147	01	BENEFIT PLAN ADMINISTRATION AGREEMENT	BENEFIT COORDINATORS CORPORATION	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C18148	01	BUSINESS ASSOCIATE AGREEMENT	BENEFIT COORDINATORS CORPORATION	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18151	31	DEVELOP AND DEMONSTRATE BATTERY ELECTRIC SWITCHER LOCOMOTIVE	RAIL PROPULSION SYSTEMS LLC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18159	01	APPLICATION OF NEXT GENERATION AIR MONITORING METHODS TO IDENTIFY AND CHARACTERIZE SOURCES OF HEXAVALENT CHROMIUM AND OTHER AIR TOXIC METALS	AERODYNE RESEARCH, INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18240	56	PROVIDE TECHNICAL ASSISTANCE TO THE ENHANCED FLEET MODERNIZATION PROGRAM	GREEN PARADIGM CONSULTING, INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18252	01	OPTICAL TENT FOR REFINERY EMISSIONS MONITORING AND EARLY WARNING OF ACCIDENTAL RELEASES	UNIVERSITY OF CALIFORNIA-LOS ANGELES	$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C18317	01	CONSULTING SERVICES TO INVESTIGATE INCENTIVE SCHEMES TO REDUCE PORT AND VESSEL EMISSIONS	ENERGY AND ENVIRONMENTAL RESEARCH	$0.00	11

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18397	31	COMMERCIALIZATION OF PORT OF LONG BEACH OFF-ROAD TECHNOLOGY DEMONSTRATION	PORT OF LONG BEACH	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19026	17	SUPPLY COMMERICIAL ELECTRIC LAWN & GARDEN EQUIPMENT FOR INCENTIVE & EXCHANGE PROGRAM	HUSQVARNA PROFESSIONAL PRODUCTS INC	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C19046	01	DESIGN, ENGINEERING AND BIDDING DOCUMENTS FOR REPLACEMENT OF LIEBERT AIR CONDITIONING UNITS	GOSS ENGINEERING, INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19072	77	REPOWER 2 MAIN ENGINES AND 1 AUXILIARY ENGINE ON A MARINE VESSEL	CENTERLINE LOGISTICS CORPORATION	$0.00	1
16	ADMINISTRATIVE & HUMAN RESOURCES	C19140	01	SUBSURFACE GEOTECHNICAL INVESTIGATION	COTTON, SHIRES AND ASSOCIATES, INC.	$11,380.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19145	80	TECHNICAL ASSISTANCE AND IMPLEMENTATION FOR THE CARL MOYER PROGRAM	GREEN PARADIGM CONSULTING, INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19155	59	SCAQMD APPROVED PARTICIPATING DEALERSHIP IN VOUCHER INCENTIVE PROGRAM	SOUTH BAY FORD INC.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19198	32	REPOWER 2 MAIN ENGINES OF A MARINE VESSEL	LOS ANGELES COUNTY SHERIFF DEPT	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19208	31	CONDUCT EMISSION STUDY ON USE OF ALTERNATIVE DIESEL BLENDS IN OFF-ROAD HEAVY DUTY ENGINES	UNIVERSITY OF CALIFORNIA RIVERSIDE	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19307	38,69	INSTALL AIR FILTRATION SYSTEMS IN SCHOOLS	IQAIR NORTH AMERICA, INC.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19312	01	TECHNICAL EXPERTISE FOR LABORATORY - NEEDED FOR THE ANALYSIS OF ASBESTOS IN BUILDING MATERIAL AND ANALYSIS OF FALLOUT MATERIAL, IN SUPPORT OF RULE 1403	SANDRA L ESSNER	$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19322	01	PROVIDE TECHNICAL SUPPORT FOR THE SCAQMD UPPER AIR METEOROLOGICAL MONITORING NETWORK	SONOMA TECHNOLOGY INC	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19330	77	PROP 1B TRUCK REPLACEMENT PROGRAM	AIR FAYRE CA INC.	$0.00	11

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
26	PLANNING RULE DEV & AREA SOURCES	C19335	01	PACIFIC RIM INITIATIVE FOR MARITIME EMISSION REDUCTIONS: COLLABORATION WITH CHINESE PORT CITIES	FUNG RESEARCH LIMITED	$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19336	01	LICENSE AGREEMENT FOR TEMPORARY AIR MONITORING SITE	CITY OF LOS ANGELES	$0.00	6
08	LEGAL	C19340	01	EVALUATION AND REPORT OF SCAQMD OFFICE OF COMPLIANCE AND ENFORCEMENT	SERVE TO LEAD GROUP INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19417	32	REPOWER 1 OFF-ROAD EQUIPMENT	MBA GRADING & DEMOLITION, INC.	$0.00	0
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19427	77	REPOWER OF 21 ON-ROAD EQUIPMENT	OMNITRANS	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19444	77	PROP 1B TRUCK REPLACEMENT PROGRAM	LINCOLN TRANSPORATION SERVICES INC.	$0.00	11
16	ADMINISTRATIVE & HUMAN RESOURCES	C19445	01	MAINTENANCE, SERVICE AND REPAIRS OF HVAC AND REFRIGERATION EQUIPMENT	KLM, INC	$3,103.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C19448	46	COMMUNITY LEADERSHIP AND ENGAGEMENT PROGRAM	CORDOBA CORPORATION	$0.00	6
35	LEGISLATIVE & PUBLIC AFFAIRS	C19448	46	COMMUNITY LEADERSHIP AND ENGAGEMENT PROGRAM	CORDOBA CORPORATION	$0.00	6
35	LEGISLATIVE & PUBLIC AFFAIRS	C19449	46	COMMUNITY LEADERSHIP AND ENGAGEMENT PROGRAM	BAKEWELL MEDIA OF LA	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C19452	01	LANDSCAPE MAINTENANCE SERVICES	TROPICAL PLAZA NURSERY INC	$4,683.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19458	32	REPLACEMENT OF 1 OFF-ROAD EQUIPMENT	POWERLAND EQUIPMENT INC	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C20003	01	TREE TRIMMING AND PLANT CARE SERVICES	GOTHIC LANDSCAPE MAINTENANCE DIVISION	$6,145.00	
26	PLANNING RULE DEV & AREA SOURCES	C20031	27	RESIDENTIAL ENERGY EFFICIENCY RETROFIT PROGRAM (COACHELLA VALLEY)	ALCAL SPECIALTY CONTRACTING, INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20044	27	FUEL CELL POWER GENERATION SYSTEM (1320 kW) FOR THE AQUARIUM OF THE PACIFIC	BIOFUELS AOP LONG BEACH, LLC	$0.00	6

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20051	54	COMMERCIAL HARBOR CRAFT NOX AND PM EMISSIONS REDUCTION TECHNOLOGY DEMONSTRATION	NETT TECHNOLOGIES INC.	$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C20058	31	AIR QUALITY MODELING AND "BIG DATA" ANALYSIS OF METEOROLOGICAL AND EMISSIONS IMPACTS ON AIR QUALITY	UNIVERSITY OF CALIFORNIA RIVERSIDE	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20061	54	CLEAN ENERGY MARKET ACCELERATION PROGRAM	CLEAN ENERGY	$0.00	11
26	PLANNING RULE DEV & AREA SOURCES	C20078	01	SOUTH COAST AQMD PARTNERSHIP WITH CANSAC-CEFA	DESERT RESEARCH INSTITUTE	$10,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C20083	01	SUBLEASE OF SACRAMENTO OFFICE	BAY AREA AIR QUALITY MANAGEMENT DISTRICT	$28,597.41	
35	LEGISLATIVE & PUBLIC AFFAIRS	C20087	01	MEDIA RELATIONS CONSULTING SERVICES	BERNARD C. PARKS, JR.	$96,428.52	
35	LEGISLATIVE & PUBLIC AFFAIRS	C20101	01	FAITH-BASED OUTREACH AND EVENT ORGANIZATION	GENESIS 1 CONSULTING GROUP	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20102	01	AIR MONITORING STATION LICENSE AGREEMENT	JUDSON BAPTIST CHURCH	$30,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20103	01	AIR MONITORING STATION LICENSE AGREEMENT	ST. LUKE HOLY BAPTIST CHURCH	$36,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C20105	27	RESIDENTIAL ENERGY EFFICIENCY RETROFIT PROGRAM (SAN FERNANDO VALLEY)	ALCAL SPECIALTY CONTRACTING, INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20110	01	CHARACTERIZATION CHAMBER SYSTEM FOR TESTING AIR MONITORING SENSOR DEVICES	RJ LEE GROUP INC	$0.00	6
35	LEGISLATIVE & PUBLIC AFFAIRS	C20118	01	LOS ANGELES -COUNTY CITIES EDUCATION PROGRAM ON BENEFITS OF CLEAN AIR BILL OUTREACH SERVICES	G ADVISORS LLC	$95,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20122	31	DEVELOP, DEMONSTRATE AND COMMERCIALIZE NEAR-ZERO NATURAL GAS AND PROPANE CONVERSION SYSTEMS FOR ON-ROAD MEDIUM-DUTY VEHICLES	LANDI RENZO USA CORPORATION	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20131	01	AIR MONITORING STATION LICENSE AGREEMENT - WILMINGTON	FIRST UNITED METHODIST CHURCH	$36,000.00	

South Coast AQMD
Contract Activity Report
July 1, 2020 - December 31, 2020

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20137	01	AIR MONITORING STATION LICENSE AGREEMENT - LEEWARD BAY	LEEWARD BAY MARINA	$6,000.00	
08	LEGAL	C20150	01	CALIFORNIA EMISSIONS ESTIMATOR MODEL (CALEEMOD)	FRANKFURT KURNIT KLEIN & SELZ, PC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20167	01	ACCESS LICENSE AGREEMENT	MOUNT ST. MARY'S COLLEGE	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20187	77	REPLACEMENT OF 6 LINE-HAUL LOCOMOTIVES	BNSF RAILWAY COMPANY	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20239	77	REPOWER 1 MAIN ENGINE OF MARINE VESSEL	DARRYL M. SATO	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20247	77	REPOWER 2 MAIN ENGINES OF A MARINE VESSEL	OPTIONS SPORTFISHING	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20272	77	REPOWER 8 MAIN ENGINES ON FOUR MARINE VESSELS	HARBOR BREEZE CORP	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20278	77	REPOWER 5 MAIN AND 2 AUXILIARY ENGINES OF TWO MARINE VESSELS	AMERICAN MARINE CORP	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20293	77	REPOWER 2 MAIN ENGINES AND 2 AUXILIARY ENGINES OF A MARINE VESSEL	MOUNTAIN AND SEA EDUCATIONAL ADVENTURES	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C20335	01	DEFERRED COMPENSATION PLAN CONSULTANT SERVICE	BENEFIT FINANCIAL SERVICES GROUP	$0.00	11
02	GOVERNING BOARD	C21013	01	BOARD ASSISTANT SERVICES FOR VANESSA DELGADO	SANDRA HERNANDEZ	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G18338	80	ALTERNATIVE FUEL SCHOOL BUS REPLACEMENT PROGRAM	ANAHEIM ELEMENTARY SCHOOL DISTRICT	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G18354	80,31	LOWER-EMISSION SCHOOL BUS REPLACEMENT INCENTIVE PROGRAM	HEMET UNIFIED SCHOOL DISTRICT	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G18366	80	LOWER-EMISSION SCHOOL BUS REPLACEMENT INCENTIVE PROGRAM	REDLANDS UNIFIED SCHOOL DISTRICT	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G18366	80	LOWER-EMISSION SCHOOL BUS REPLACEMENT INCENTIVE PROGRAM	REDLANDS UNIFIED SCHOOL DISTRICT	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G18370	80,31	PURCHASE 2 CNG SCHOOL BUSES WITH FIRESUPPRESSON SYSTEMS AND ASSOCIATED INFRASTRUCTURE	SAN JACINTO UNIFIED SCHOOL DISTRICT	$0.00	11

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	MSRC	ML12091	23	INSTALL EV CHARGING STATIONS	CITY OF BELLFLOWER	$0.00	6
44	MSRC	ML14021	23	INSTALL A CLASS 1 BIKEWAY	COUNTY OF RIVERSIDE	$0.00	6
44	MSRC	ML14023	23	UPGRADE VEHICLE MAINTENANCE FACILITY IN WESTCHESTER	COUNTY OF LOS ANGELES	$0.00	6
44	MSRC	ML14030	23	BICYCLE INFRASTRUCTURE & EDUCATION	COUNTY OF LOS ANGELES	$0.00	6
44	MSRC	ML14097	23	INSTALL EV CHARGING STATIONS WITH AT LEAST 38 CHARGING PORTS	COUNTY OF LOS ANGELES	$0.00	6
44	MSRC	ML16041	23	INSTALL EV CHARGING STATIONS	CITY OF MORENO VALLEY	$0.00	6
44	MSRC	ML16052	23	INSTALL CLASS 1 BIKEWAY	CITY OF RANCHO CUCAMONGA	$0.00	6
44	MSRC	ML16053	23	IMPLEMENT "COMPLETE STREETS" PROJECT	CITY OF CLAREMONT	$0.00	6
44	MSRC	ML16057	23	IMPLEMENT COUNTY LINE ROAD "COMPLETE STREETS" PROJECT	CITY OF YUCAIPA	$0.00	6
44	MSRC	ML16077	23	IMPLEMENT PEDESTRIAN IMPROVEMENTS AND BIKE SHARING	CITY OF RIALTO	$0.00	6
44	MSRC	ML18081	23	INSTALL 2 EV CHARGING STATIONS	CITY OF BEAUMONT	$0.00	6
44	MSRC	ML18084	23	INSTALL 2 EV CHARGING STATIONS	CITY OF SOUTH EL MONTE	$0.00	6
44	MSRC	ML18088	23	INSTALL A CLASS I BIKEWAY	CITY OF BIG BEAR LAKE	$0.00	6
44	MSRC	ML18144	23	INSTALL 12 EV CHARGING STATIONS	CITY OF FONTANA	$0.00	11
44	MSRC	ML18163	23	PROCURE 3 LIGHT-DUTY ZEVS AND INSTALL EV CHARGING STATIONS	CITY OF SAN CLEMENTE	$0.00	6
44	MSRC	ML18169	23	INSTALL 12 EV CHARGING STATIONS	CITY OF ALHAMBRA	$0.00	11
44	MSRC	ML18178	23	PROCURE 1 HEAVY-DUTY NEAR-ZERO EMISSIONS VEHICLE	CITY OF LA PUENTE	$0.00	6
44	MSRC	MS16096	23	INSTALL EV CHARGING STATIONS	SAN BERNARDINO COUNTY TRANSPORTATION	$0.00	6
44	MSRC	MS18002	23	IMPLEMENT "GO HUMAN" PROGRAM	SOUTHERN CALIFORNIA ASSOCIATION OF GOVT	$0.00	6
44	MSRC	MS21002	23	PROVIDE PROGRAMMATIC SERVICES TO THE MSRC	BETTER WORLD GROUP ADVISORS	$0.00	4
					Subtotal	**$749,258.61**	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
V. TERMINATED CONTRACTS-PARTIAL/NO WORK PERFORMED							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C18070	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SUPERIOR READY MIX CONCRETE, L.P.	-$6,900,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19071	77	REPOWER 1 MAIN ENGINE OF A MARINE VESSEL	FREELANCE SPORTFISHING, INC.	-$2,677.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19094	77	REPLACEMENT OF 42 ON-ROAD EQUIPMENT	CR&R INCORPORATED	-$204,237.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19236	77	PROP 1B TRUCK REPLACEMENT PROGRAM	CALPORTLAND COMPANY	-$100,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19450	77	REPLACEMENT OF 2 ON-ROAD EQUIPMENT	TRICON TRANSPORTATION, INC.	-$16,226.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C19468	27	DEPLOYMENT OF 110 ZERO-EMISSIONS CLASS 5 BATTERY-ELECTRIC PANEL VANS	CHANJE ENERGY, INC.	-$700,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C20224	32	REPOWER 44 ENGINES ON 22 DUAL-ENGINE VEHICLES	TGI EQUIPMENT CORPORATION	-$87,528.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G18056	80	PURCHASE 2 ELECTRIC SCHOOL BUSES WITH ASSOCIATED INFRASTRUCTURE	LOS ANGELES UNIFIED SCHOOL DISTRICT	-$258,000.00	7
44	MSRC	ML14027	23	INSTALL AND MAINTAIN CNG FUELING STATION IN DOWNEY	COUNTY OF LOS ANGELES	-$8,000.00	7
44	MSRC	ML14072	23	PURCHASE 3 CNG VEHICLES, INSTALL 4 EV CHARGING STATIONS AND INSTALL 20 BIKE RACKS	CITY OF CATHEDRAL CITY	-$25,000.00	7
44	MSRC	ML16126	23	INSTALL BICYCLE RACKS; CONDUCT OUTREACH AND EDUCATION	CITY OF PALM SPRINGS	-$18,000.00	7
44	MSRC	ML18153	23	INSTALL 4 EV CHARGING STATIONS	CITY OF CATHEDRAL CITY	-$52,215.00	7
44	MSRC	MS18009	23	MODIFY MAINTENANCE FACILITY AND TRAIN TECHNICIANS	PENSKE TRUCK LEASING CO LP	-$82,500.00	7
					Subtotal	**-$8,454,383.00**	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE

SPECIAL FUNDS

17	ADV. TECH, OUTREACH &
22	AIR QUALITY
23	MSRC FUND
27	AIR QUALITY INVESTMENT
31	CLEAN FUELS FUND
32	CARL MOYER FUND -
33	SCHOOL BUS
34	ZERO EMISSION VEHICLE
35	AES SETTLEMENT
36	RULE 1309.1 PRIORITY
37	CARB ERC BANK FUND
38	LADWP SETTLEMENT
39	STATE EMISSIONS
40	NATURAL GAS VEHICLE
45	CBE/CBO SETTLEMENT
46	BP ARCO SETTLEMENT
48	HEALTH EFFECTS
49	CEQA GHG MITIGATION FUND
50	DOE ARRA-PLUG-IN
51	DOE ARRA-LNG CORRIDOR
52	TRAPAC SCHOOL AIR
53	EMISSION REDUCTION AND OUTREACH FUND
56	HEROS II PROGRAM FUND
58	AB1318 MITIGATION FEES
59	VOUCHER INCENTIVE
68	EXXONMOBIL SETTLEMENT
75	AIR FILTRATION FUND
77	COMMUNITY AIR
80	CARL MOYER FUND - AB923
81	PROPOSITION 1B - GOODS
82	PROPOSITION 1B - LOWER

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 5, 2021 AGENDA NO. 20

REPORT: Status Report on Major Ongoing and Upcoming Projects for Information Management

SYNOPSIS: Information Management is responsible for data systems management services in support of all South Coast AQMD operations. This item is to provide the monthly status report on major automation contracts and planned projects.

COMMITTEE: Administrative, February 12, 2021, Reviewed

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

RMM:MAH:XC:dc

Background
Information Management (IM) provides a wide range of information systems and services in support of all South Coast AQMD 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 and Board-approved amendments to the Budget specify projects planned during the fiscal year to develop, acquire, enhance, or maintain mission-critical information systems.

In light of COVID-19 and the related budget impact, we are evaluating all of our projects and delaying non-critical projects as long as possible.

Summary of Report
The attached report identifies the major projects/contracts or purchases that are ongoing or expected to be initiated within the next six months. Information provided for each project includes a brief project description and the schedule associated with known major milestones (issue RFP/RFQ, execute contract, etc.).

Attachment
Information Management Status Report on Major Ongoing and Upcoming Projects During the Next Six Months

ATTACHMENT
March 5, 2021 Board Meeting
Status Report on Major Ongoing and Upcoming Projects for Information Management

Project	Brief Description	Estimated Project Cost	Completed Actions	Upcoming Milestones
Office 365 Implementation	Acquire and implement Office 365 for South Coast AQMD staff	$350,000	• Pre-assessment evaluation and planning completed • Board approved funding on October 5, 2018 • Developed implementation and migration plan • Acquired Office 365 licenses • Implemented Office 365 email (Exchange) and migrated all users • Trained staff in Office 365 Pro Plus desktop software • Implemented Office 365 Pro Plus, Office Web, and OneDrive for Business	• Implement Office 365 internal website (SharePoint) and migrate existing content
Cybersecurity Assessment	Perform a cybersecurity risk assessment that will identify any potential cybersecurity risks and recommend changes to align with industry standards and peer organizations.	$100,000 (not included in FY 2020-21 Budget)		• Release RFP March 5, 2021 • Award Contract June 4, 2021 • Complete Cybersecurity assessment September 30, 2021
Phone System Upgrade	Upgrade components of the agency Cisco Unified Communications System that are past end of support.	$190,000 (not included in FY 2020-21 Budget)		• Release RFQ April 2, 2021 • Recommend Award June 4, 2021 • Award bid June 16, 2021 • Complete upgrade September 30, 2021

Project	Brief Description	Estimated Project Cost	Completed Actions	Upcoming Milestones
South Coast AQMD Mobile Application Enhancements	Enhancement of Mobile application to incorporate FIND	$60,000	• Vision and scope completed	• Task Order issuance
Permitting System Automation Phase 2	Enhanced Web application to automate filing of permit applications, Rule 222 equipment and registration for IC engines; implement electronic permit folder and workflow for internal South Coast AQMD users	$525,000	• Board approved initial Phase 2 funding December 2017 • Board approved remaining Phase 2 funding October 5, 2018 • Completed report outlining recommendations for automation of Permitting Workflow • Developed application submittals and form filing for first nine of 32 400-E forms • Completed application submittals and form filing for 23 types of equipment under Rule 222 ready for User Testing • Deployed to production top three most frequently used Rule 222 forms: Negative Air Machines, Small Boilers, and Charbroilers • Completed requirements gathering for Phase II of the project (an additional 10 400-E-XX forms) • User Acceptance Testing and Deployment to production of Emergency IC Engines Form (EICE-RE) completed.	• Complete User Acceptance Testing and Deployment to Production of first nine 400-E-XX forms • Complete User Acceptance Testing and Deployment to Production of remaining 22 Rule 222 forms • Development of Phase II additional 12 400-E-XX forms

Project	Brief Description	Estimated Project Cost	Completed Actions	Upcoming Milestones
AQ-SPEC Cloud Platform Phase II	Integrate separate data systems into the AQ-SPEC cloud-based platform to manage data and build interactive data visualizations and data dashboards for web-based viewing	$313,350	• Project charter released • Task order issued, evaluated and awarded • Project kickoff completed	• Requirement gathering
PeopleSoft Electronic Requisition	. This will allow submittal of requisitions online, tracking multiple levels of approval, electronic archival, pre-encumbrance of budget, and streamlined workflow	$75,800	• Project charter released • Task order issued, evaluated and awarded • Requirement gathering and system design completed • System setup and code development and user testing for Information Management completed • System setup and code development and User Acceptance Testing completed for Administrative and Human Resources completed • System setup for Technology Advancement Office completed	• Deployment to IM and AHR Divisions • TAO training and Integrated User Testing for other divisions
Proposition 1B	Development of an online Grant Management System (GMS) portal for the Proposition 1B Program - Goods Movement Emission Reduction Program – Heavy-Duty Trucks	$75,200	• Draft Charter Document issued • Project Initiation completed • Task order issued • Deployed Phase I to production – applicant/third party registration and application submission • Developed additional forms and customized GMS look and feel	• User Acceptance Testing for additional forms • Development of AQMD staff evaluation module

Project	Brief Description	Estimated Project Cost	Completed Actions	Upcoming Milestones
Source Test Tracking System	Online Source Test Tracking System will keep track of timelines and quantify the number of test protocols and reports received. System will provide an external online portal to submit source testing protocols and reports, track the review process, and provide integration to all other business units. It will also provide an external dashboard to review the status of a submittal	$250,000	• Project Charter approved • Project Initiation completed • Task Order issued • Project Kick-off completed • User requirements gathering for internal users Developed Full Business Process Model Developed screens mock-ups • Reviewed proposed automation with EQUATE group completed • Proposal for system development approved • Completed Development of Sprint 1 of the Source Test Protocol and Report Tracking System	• Development of Sprints 2 and 3
Renewal of HP Server Maintenance & Support	Purchase of maintenance and support services for servers and storage devices	$140,000		• Request Board approval on March 5, 2021 • Execute contract April 30, 2021

Project	Brief Description	Estimated Project Cost	Completed Actions	Upcoming Milestones
VW Environmental Mitigation Action Plan Project	CARB has assigned South Coast AQMD to develop web applications for: Zero-Emission Class 8 Freight and Port Drayage Truck Project and Combustion Freight and Marine Project. The agency is also responsible for maintaining a database that will be queried for reporting	$355,000	• Draft Charter Document issued • Project Initiation completed • Task order issued • Deployed Phase I to production • Phase II to production – Messaging, Evaluation, and Administration • Developed evaluation module and calculation module completed • Phase III - ZE Class 8 Application deployed to production • Developed Phase III – Ranking Contracting, and Inspection	• User Acceptance Testing for Phase III – Ranking, Contracting, and Inspection
Renewal of OnBase Software Support	Authorize the sole source purchase of OnBase software subscription and support for one year	$140,000		• Request Board approval May 7, 2021 • Execute contract July 15, 2021
Lower-Emission School Bus Program	Development of an online Grant Management System (GMS) portal for the Lower-Emission School Bus Incentive Program	$50,200	• Draft Charter Document issued • Project Initiation completed • Task order issued • Phase I deployed to production – applicant/third party registration and application submission	• Customize GMS look and feel • Development of staff evaluation module

Projects that have been completed within the last 12 months are shown below.	
Completed Projects	
Project	Date Completed
AER enhancements for reporting year 2020	December 30, 2020
South Coast AQMD Mobile Application Enhancements – Gridded AQI	December 9, 2020
Lower Emission School Bus Online Application Filing and Grant Management	December 9, 2020
Rule 1180 Fence Line Monitoring Web Site Enhancements II	November 6, 2020
Proposition 1B Online Application Filing and Grant Management Portal	November 6, 2020
CLASS Database Software Licensing	October 16, 2020
Flare Event Notification – Rule 1118 Phase II	October 14, 2020
Volkswagen Environmental Mitigation Administration Zero Emission Class 8	August 18, 2020
Ingres Actian X database migration	August 17, 2020
Rule 1403 Enhancement	July 1, 2020
Legal Office System	June 17, 2020
Document Conversion Services	June 30, 2020
Oracle PeopleSoft Software Support	June 5, 2020
Renewal of OnBase Software Support	May 1, 2020
Public Facing Permit Application Status Dashboard	May 1, 2020
Mobile Application Enhancement – Hourly Forecast	April 29, 2020
Renewal of HP Server Maintenance & Support	April 30, 2020
Rule 1180 Fence Line Monitoring Web Site Enhancements	April 3, 2020
Volkswagen Environmental Mitigation Administration and Communication Module	March 3, 2020
Data Cable Infrastructure Installation	February 31, 2020
Prequalify Vendor List for PCs, Network Hardware, etc.	February 7, 2020

Agenda No. 21

Budget and Economic Outlook Update

Board Meeting

March 5, 2021

South Coast AQMD

Presentation Topics

- Economic Indicators
- South Coast AQMD Metrics and Economic Implications
- Summary Charts

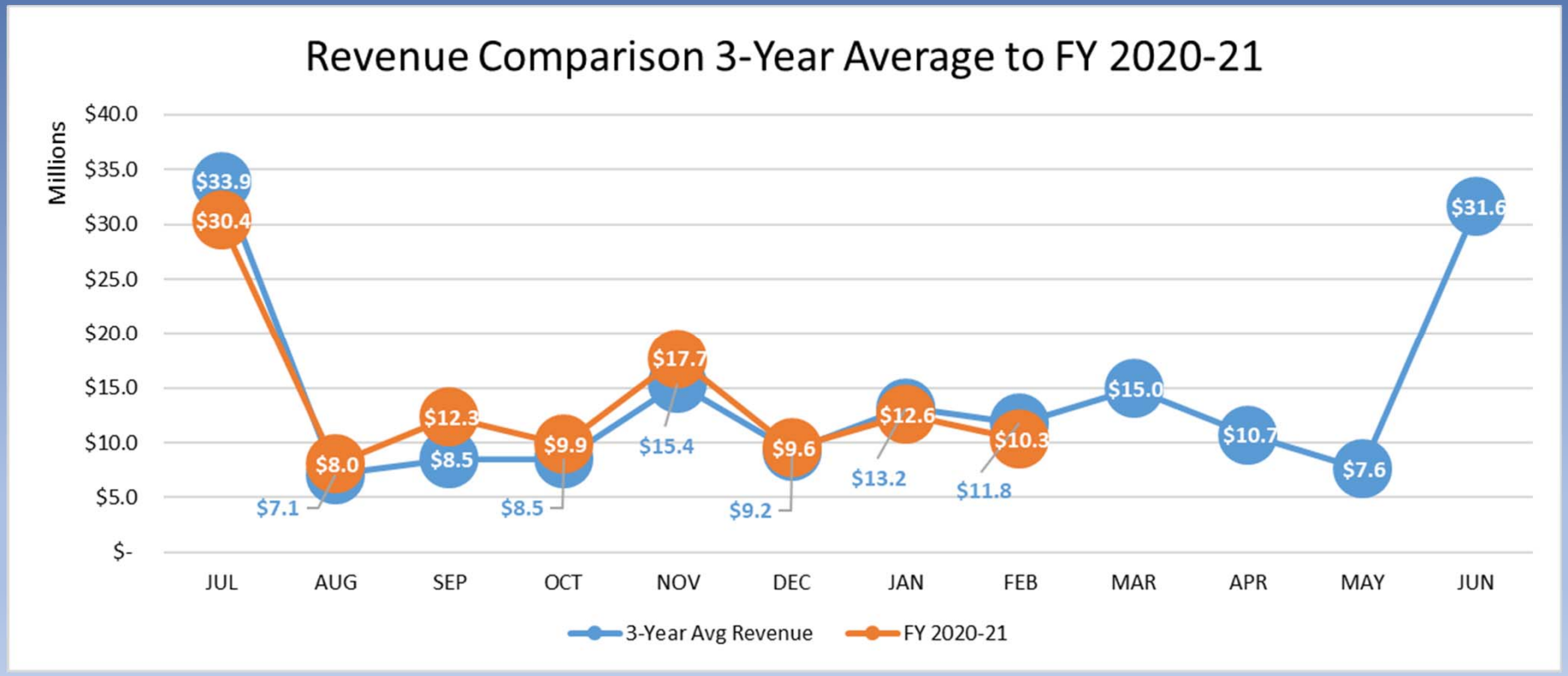
Summary of Metrics – Monthly

Metric			
State Economic Indicators	**January 2020**	**January 2021**	**Notes**
Statewide Refinery Activity (Million Barrels Crude Oil Input)	56.2	42.8	
Port TEU Throughput (Million TEUs)	1.4	1.6	
Statewide Unemployment %	3.9%	9.0%	December data
South Coast AQMD	**February 2020**	**February 2021**	
Revenue	$10.9 million	$10.3 million	
Expenditures	$14.0 million	$13.3 million	
Vacancy Rate	12.3%	16.6%	
Permit Applications Received	659	459	Feb. 2021 preliminary data
Expired Permits	114	359	1 year to reinstate
Fee Review Requests	4	5	
CEQA Activity	41	49	

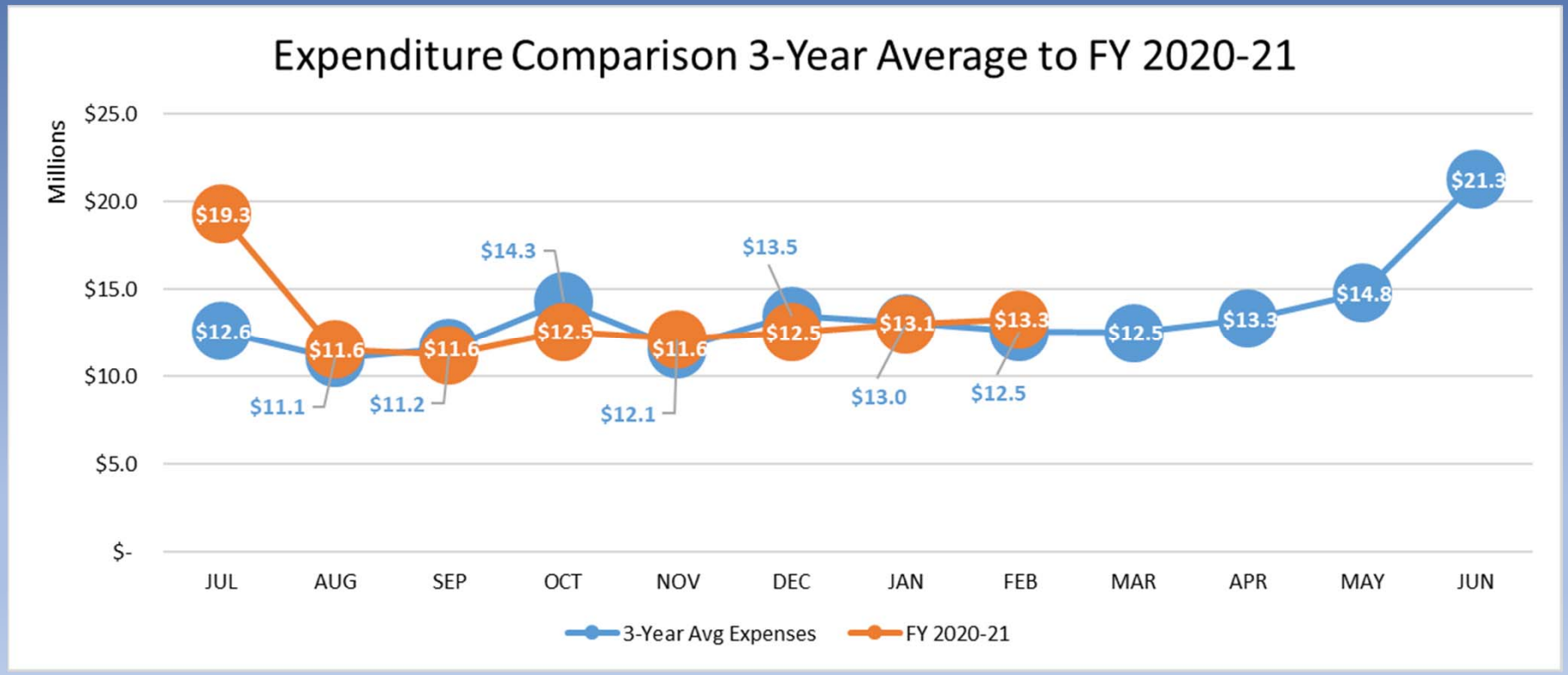
Summary of Metrics – Year to Date

Metric			
State Economic Indicators	**July 2019 – Jan 2020**	**July 2020 – Jan 2021**	**Notes**
Statewide Refinery Activity (Million Barrels Crude Oil Input)	361	272	
Port TEU Throughput (Million TEUs)	10.2	11.7	
Statewide Unemployment %	3.9%	10.3%	Average July - Dec
South Coast AQMD	**July 2019 – Jan 2020**	**July 2020 – Feb 2021**	
Revenue	$117.6 million	$110.8 million	
Expenditures	$109.2 million	$105.5 million	
Permit Applications Received	4,485	4,405	Jan/Feb YTD is -30%
Expired Permits	574	1,741	1 year to reinstate
Fee Review Requests	29	46	
CEQA Activity	477	411	

Revenue


Revenue Comparison 3-Year Average to FY 2020-21
Millions
$40.0
$35.0
$30.0
$25.0
$20.0
$15.0
$10.0
$5.0
$-
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
$33.9
$30.4
$7.1
$8.0
$8.5
$12.3
$8.5
$9.9
$15.4
$17.7
$9.2
$9.6
$13.2
$12.6
$11.8
$10.3
$15.0
$10.7
$7.6
$31.6
3-Year Avg Revenue
FY 2020-21

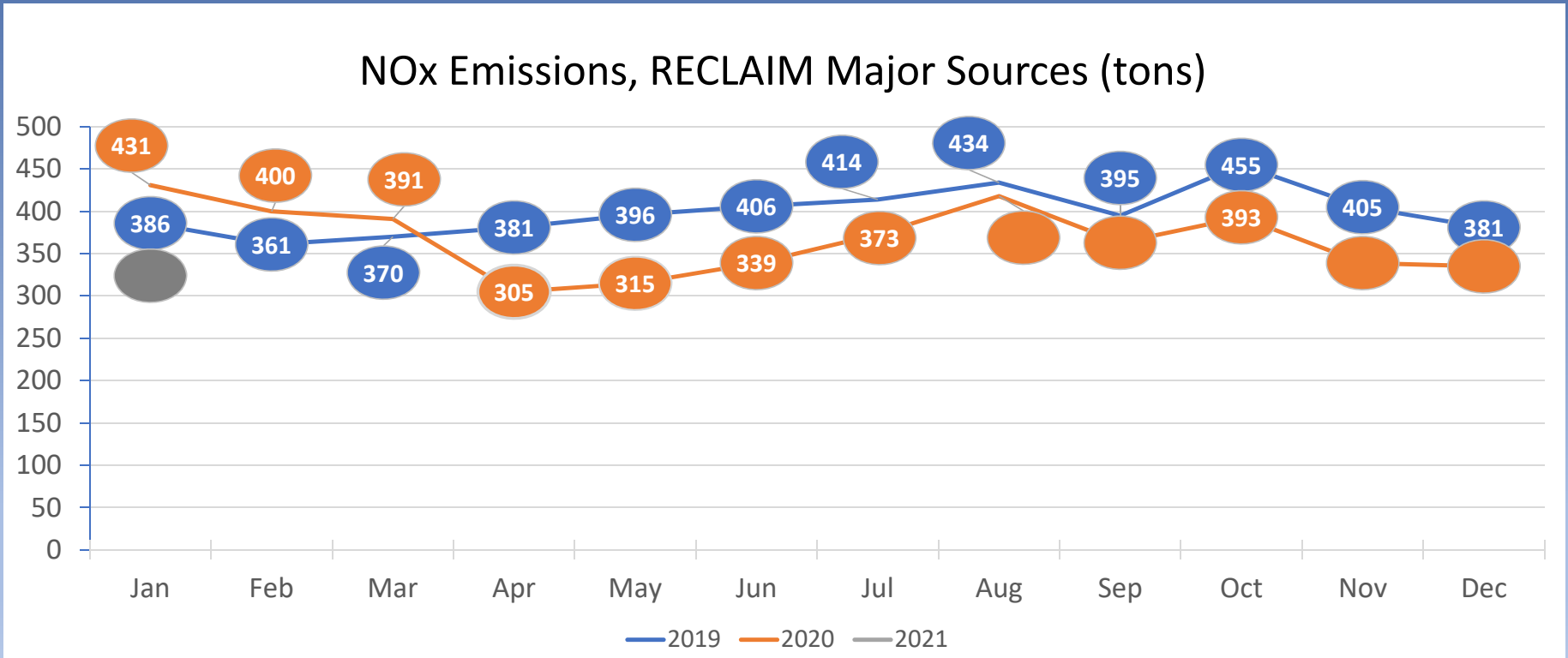
Expenditures



Staffing Levels as of March 2, 2021

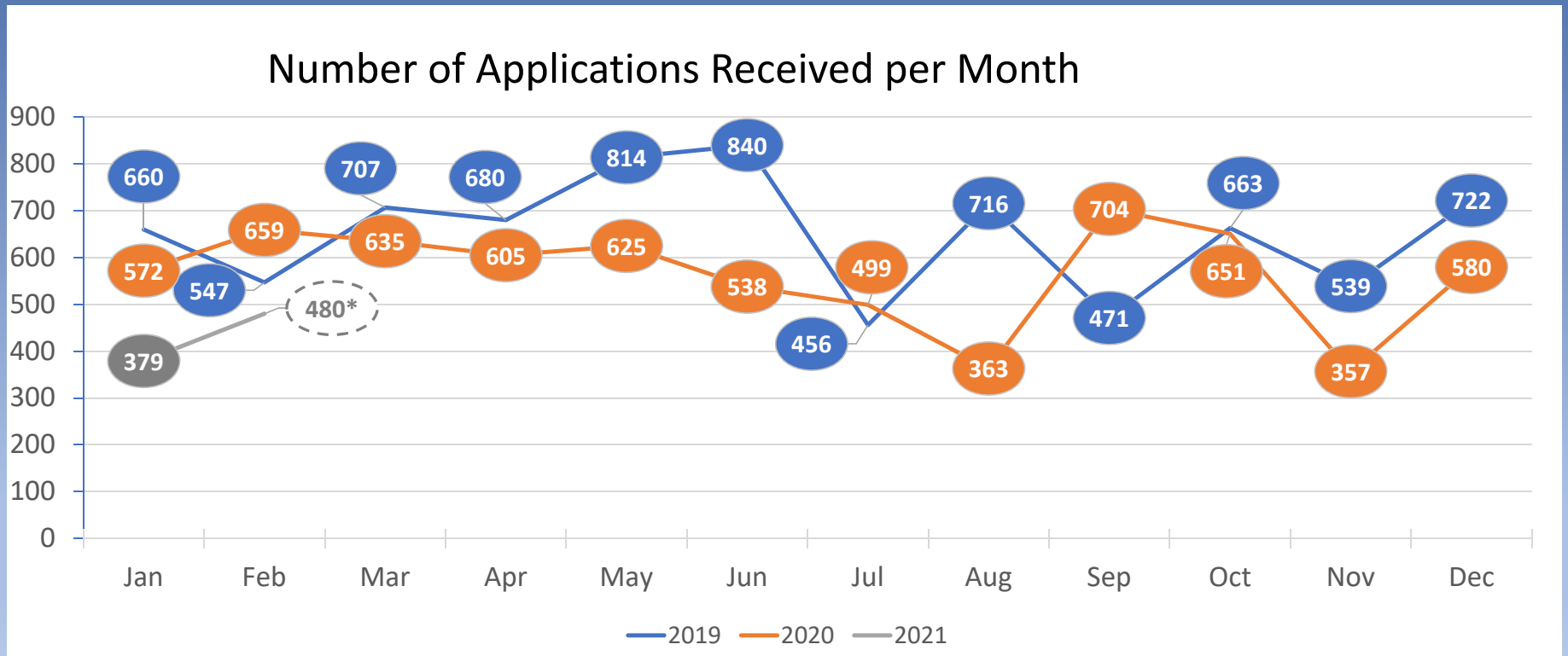
- 946 budgeted FTEs
- 157 vacant positions
- 787 filled positions
- 16.6 % vacancy rate
  - Recruitments in progress for Inspectors, Engineers and Air Quality Instrument Specialists

Emission Trends



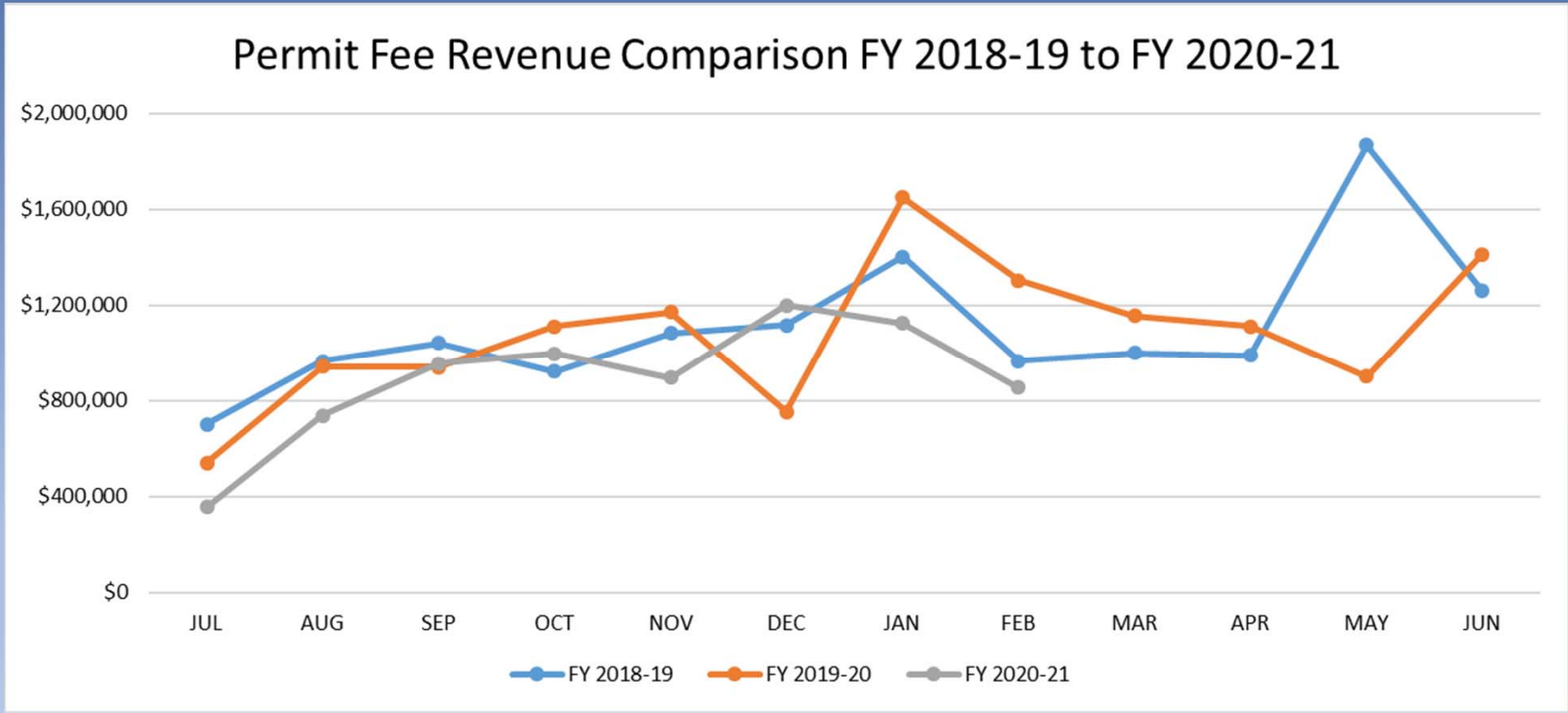
As of February 26, 2020

Permit Activity

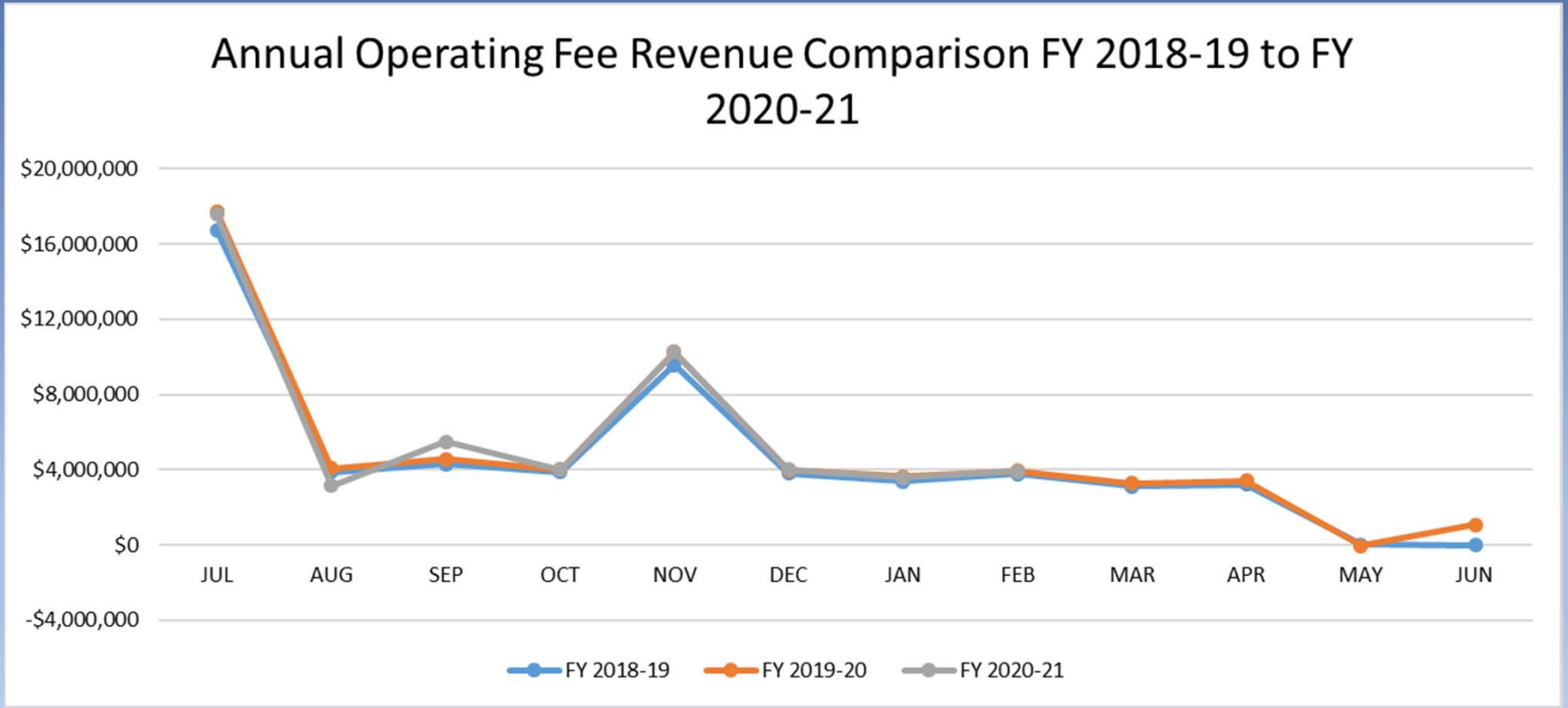


*Preliminary data as of March 1, 2021

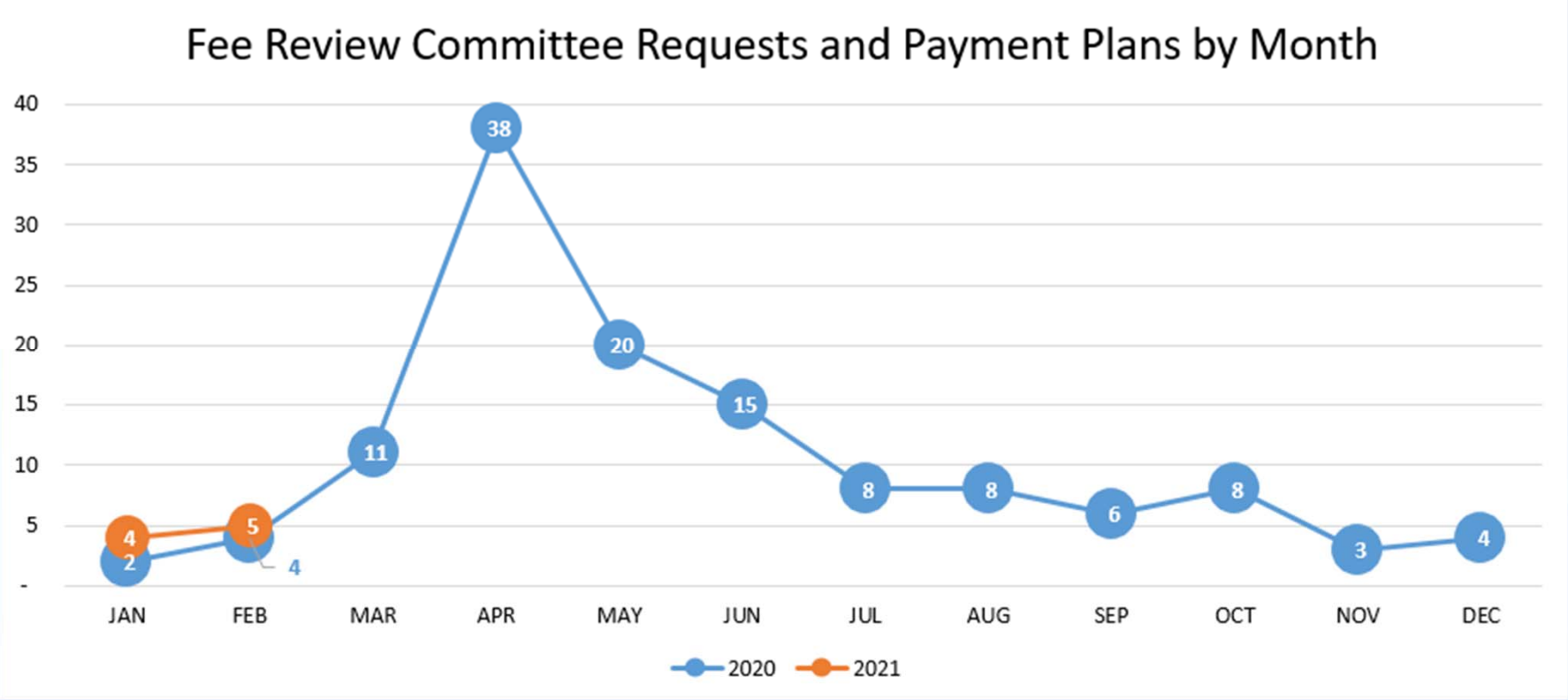
Permit Revenue



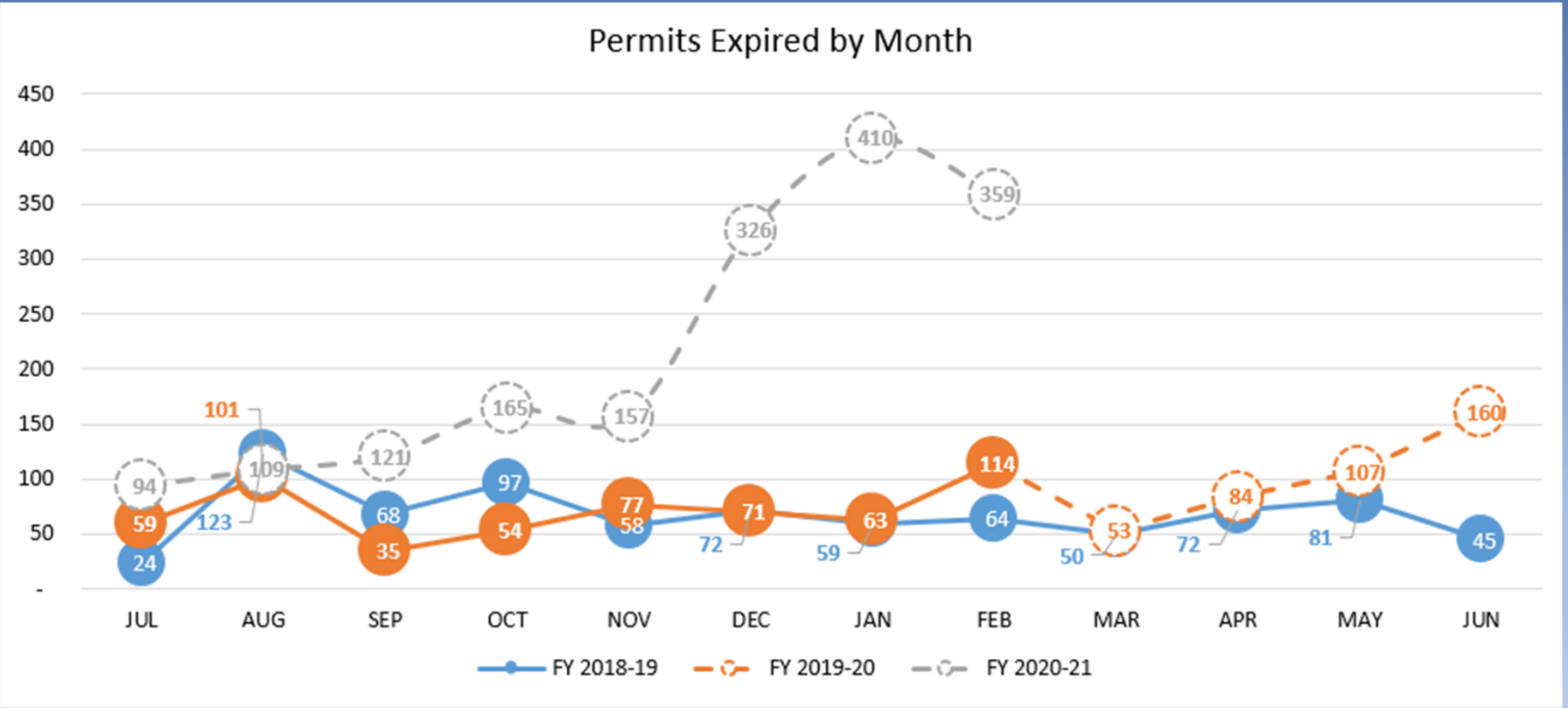
Annual Operating Fee Revenue



Fee Review Committee Requests

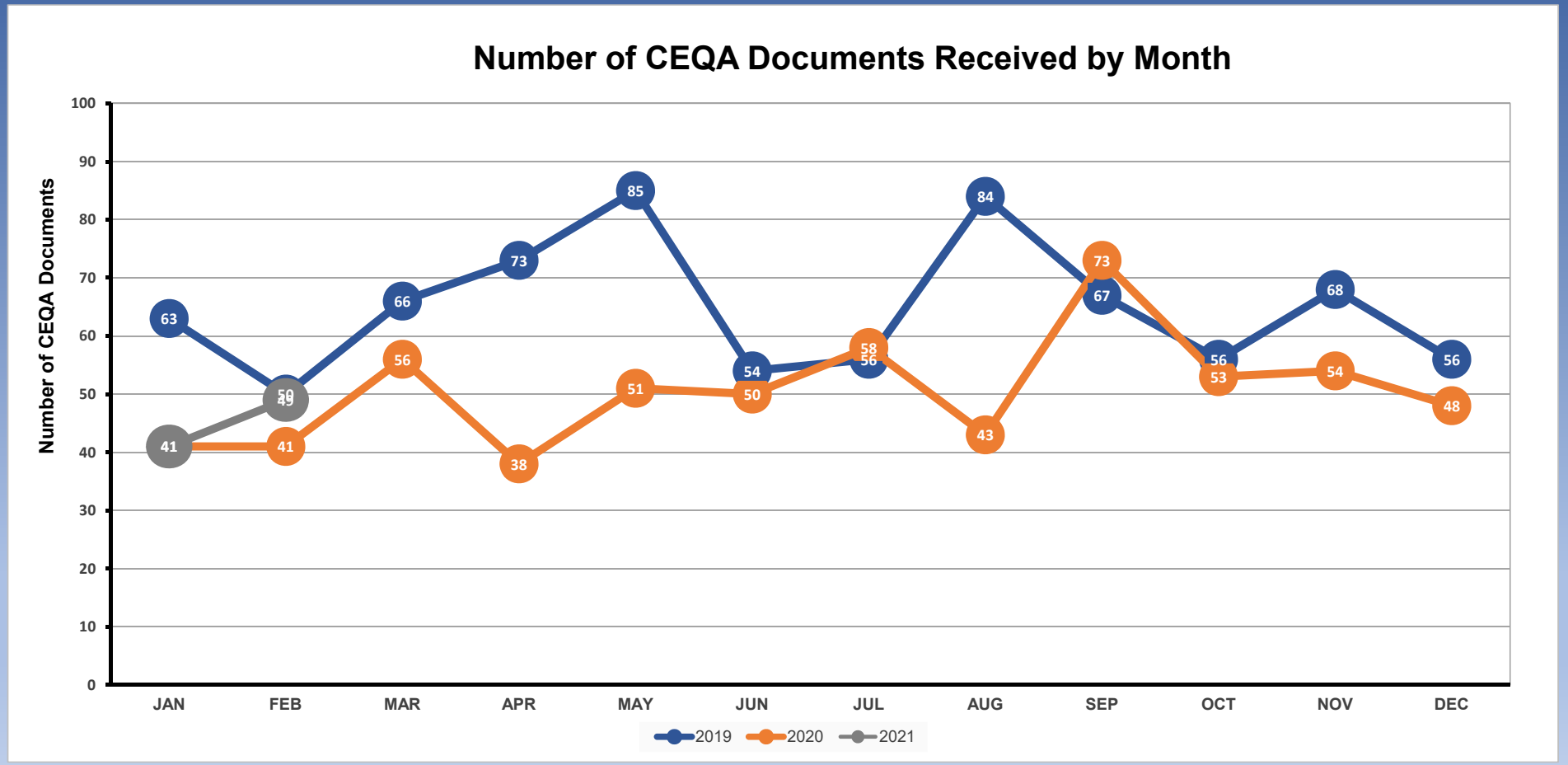


Permits - Expired and Potentially Expired



Dotted lines represent permits that have time to be reinstated

CEQA Activity



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Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 22

REPORT: Administrative Committee

SYNOPSIS: The Administrative Committee held a meeting remotely, Friday, February 12, 2021. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Dr. William A. Burke, Chair
Administrative Committee

drw

Committee Members
Present: Dr. William A. Burke, Chair (videoconference)
Mayor Pro Tem Ben Benoit/Vice Chair (videoconference)
Mayor Pro Tem Michael Cacciotti (videoconference)

Call to Order
Chairman Burke called the meeting to order at 10:00 a.m.

DISCUSSION ITEMS:

1. **Board Members' Concerns:** There were no concerns to report.

2. **Chairman's Report of Approved Travel:** There was no travel to report.

3. **Report of Approved Out-of-Country Travel:** There was no travel to report.

4. **Review March 5, 2021 Governing Board Agenda:** Mayor Pro Tem Cacciotti commented that there was concern about the lack of funds for the Commercial Electric Lawnmower Exchange Program in the Compton area. Matt Miyasato, Chief Technologist, Science & Technology Advancement, responded that Stihl has a backlog inventory/backup list. They did not let us know they were

exceeding their funding allocation, but staff will adjust their contract. The Board previously approved additional funds so contracts can be amended to allow all of the vendors to have a cushion to do additional purchases. This should take place in the next few weeks and we are encouraging them to place the orders. Vice Chair Benoit asked how we can help gardeners market their electric lawn service and suggested identifying electric lawnmowers by attaching the South Coast AQMD logo. Mayor Pro Tem Cacciotti asked that staff revise the current flyer related to the incentive program for lawn and garden equipment.

5. **Approval of Compensation for Board Member Assistant(s)/ Consultant(s):** Vice Mayor Richardson has selected Matthew Hamlett as his Board Consultant. Board Member Kracov amended the existing contract with Ross Zelen, and has added a new Board Consultant, Genevieve Amsalem.

   Moved by Cacciotti; seconded by Benoit, unanimously approved.

Ayes:	Burke, Benoit, Cacciotti
Noes:	None
Absent:	None

6. **Update on South Coast AQMD Inclusion, Diversity and Equity Efforts:** Anissa (Cessa) Heard-Johnson, Diversity, Equity & Inclusion (DEI) Officer, spoke about Dr. Burke's influence on her family as she was growing up, and this made her care about the environment and inclusion of environmental issues in social justice. Ms. Heard-Johnson reported on efforts in her first few weeks on the job and acknowledged the work of the Inclusion, Diversity and Equity Advisory (IDEA) panel.

   Dr. Burke asked when will Ms. Heard-Johnson be ready to provide a presentation after she reviews Board policies, and Ms. Heard-Johnson responded that a preliminary policy view will be presented at the March Administrative Committee meeting.

   Mr. Harvey Eder provided public comment on the solar financing program in the late 1970s and early 1980s for low income individuals and stressed the need for equity in investments for housing, homelessness and health.

7. **Budget and Economic Outlook Update:** Jill Whynot, Chief Operating Officer, reported on permit data and responded to suggestions made at the Board meeting. Dr. Burke suggested staff contact the Black Business Alliance and other minority business groups to help better understand impacts of the pandemic on small and minority owned businesses.

8. **Report of RFQs Scheduled for Release in March:** Sujata Jain, Chief Financial Officer, reported that this RFQ is to establish a three-year pre-qualified vendor list for janitorial products.

9. **South Coast AQMD's FY 2020-21 Second Quarter Ended December 31, 2020 Budget vs. Actual (Unaudited):** Ms. Jain provided an overview of the Budget vs. Actual for the second quarter, ended on December 31, 2020, revenues, expenditures and the updated General Fund Five-year projection based on results. Dr. Burke asked about the South Coast AQMD budget. Ms. Jain stated we are doing okay right now, but future revenue is expected to decline due to lower permit activity. There was a lengthy discussion about the current vacancy rate which is not sustainable because staff are working too many hours at a very high pace. Recruitments are in progress which will lower the vacancy rate. Board Members expressed appreciation for all the efforts and encouraged staff to take good care of themselves.

10. **Status Report on Major Ongoing and Upcoming Projects for Information Management:** Ron Moskowitz, Chief Information Officer/Information Management, reported an enhancement to our online payment system was completed that allows expired permit payments to be made online. Also completed was the W2 and 1099 processing for tax year 2020 and all forms of electronic files were successfully sent. Analytics for public facing web applications for AB 617 and Rule 1180 were enhanced, and other projects are on track.

ACTION ITEMS:

11. **Authorize Purchase of Maintenance and Support Services for Servers and Storage Devices:** Mr. Moskowitz reported that this is a standard annual request to authorize the purchase of maintenance and support services for servers and storage. Funds are available in our budget.

    Moved by Cacciotti; seconded by Benoit, unanimously approved.

Ayes:	Burke, Benoit, Cacciotti
Noes:	None
Absent:	None

12. **Issue RFP for Cybersecurity Assessment:** Mr. Moskowitz reported that this request is to issue an RFP to conduct a comprehensive cyber security assessment that will identify potential cyber security risks and recommend mitigation efforts. Included in the scope of services will be simulated cyber-attacks, web application

vulnerability testing, application code review, social engineering, and cyber security maturity review. Funds are not to exceed $100,000.

Moved by Cacciotti; seconded by Benoit, unanimously approved.

Ayes: Burke, Benoit, Cacciotti
Noes: None
Absent: None

13. **Execute Contract for Biennial Audit of Motor Vehicle Registration Revenues for FYs 2017-18 and 2018-19:** This item was continued to the March Administrative Committee meeting.

14. **Add Positions for FY 2020-21 Budget to Address Operational Needs:** John Olvera, Deputy Executive Officer/Administrative & Human Resources, reported that this item is to add three positions to the Fiscal Year 2021 budget. There is a need for a Senior Public Affairs Manager and a secretary in Legislative, Public Affairs and Media to support AB 617 and environment justice programs, and to add a Senior Administrative Secretary to support the DEI officer.

Moved by Benoit; seconded by Cacciotti, unanimously approved.

Ayes: Burke, Benoit, Cacciotti
Noes: None
Absent: None

15. **Recommend to Appoint and Renew Members to South Coast AQMD's Environmental Justice Advisory Group:** Derrick Alatorre, Deputy Executive Officer/Legislative, Public Affairs & Media, reported that this item is to appoint new members to the Environmental Justice Advisory Group, as well as to renew existing membership. The new members are from the public sector, academia and nonprofit.

Moved by Benoit; seconded by Cacciotti, unanimously approved.

Ayes: Burke, Benoit, Cacciotti
Noes: None
Absent: None

WRITTEN REPORT:

16. **Local Government & Small Business Assistance Advisory Group Minutes for the December 11, 2020:** The report was acknowledged and received.

OTHER MATTERS:

17. **Other Business:** There was no other business to report.

18. **Public Comment:** Mr. Eder asked about South Coast AQMD's response to a public comment at the last Board meeting and how South Coast AQMD addressed his concerns about his experience in federal court. Dr. Burke suggested that Mr. Eder talk with Mr. Gilchrist.

19. **Next Meeting Date:** The next regular Administrative Committee meeting is scheduled for March 12, 2021 at 10:00 a.m.

Adjournment
The meeting adjourned at 11:11 a.m.

Attachment
Local Government & Small Business Assistance Advisory Group Minutes for December 11, 2020

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, 2020
MEETING MINUTES

MEMBERS PRESENT:
Council Member Ben Benoit, LGSBA Chairman (Board Member)
Supervisor Janice Rutherford (Board Member)
Felipe Aguirre
Mayor Rachelle Arizmendi, City of Sierra Madre
Paul Avila, P.B.A. & Associates
Geoffrey Blake, Metal Finishers of Southern California
Todd Campbell, Clean Energy
LaVaughn Daniel, DancoEN
John DeWitt, JE DeWitt, Inc.
Bill LaMarr, California Small Business Alliance
Rita Loof, RadTech International
Eddie Marquez, Roofing Contractors Association
David Rothbart, Los Angeles County Sanitation District

OTHERS PRESENT:
Mark Abramowitz
Heather Bolstad, Office of Environmental Health Hazard Assessment
David Edwards, California Air Resources Board
John Faust, Office of Environmental Health Hazard Assessment
Thomas Gross, Board Member Consultant *(Benoit)*
Rachel Hirani, Office of Environmental Health Hazard Assessment
Dan McGivney, SoCal Gas
Debra Mendelsohn, Board Member Consultant *(Rutherford)*
Gabe Ruiz, California Air Resources Board
Mark Taylor, Board Member Consultant *(Rutherford)*
Janet Whittick

SOUTH COAST AQMD STAFF:
Derrick Alatorre, Deputy Executive Officer
Daphne Hsu, Senior Deputy District Counsel
Mark Henninger, Information Technology Manager
Lisa Tanaka O'Malley, Senior Public Affairs Manager
Anthony Tang, Information Technology Supervisor
Van Doan, Air Quality Specialist
Elaine-Joy Hills, Air Quality Specialist
Paul Wright, Senior Information Technology Specialist

Agenda Item #1 - Call to Order/Opening Remarks
Chair Ben Benoit called the meeting to order at 11:30 a.m.

Mr. Derrick Alatorre provided guidelines and general instructions for participation in the remote meeting for the Local Government & Small Business Assistance Advisory Group (LGSBA) meeting via Zoom webinar and teleconference.

Agenda Item #2 – Approval of November 13, 2020 Meeting Minutes/Review of Follow-Up/Action Items
Chair Benoit called for approval of the November 13, 2020 meeting minutes. The minutes were approved unanimously.

Agenda Item #3 – Review of Follow Up/Action Items
No follow-up or action items.

Agenda Item #4 – Addressing Unassessed Chemicals in California
Dr. John Faust, Branch Chief for the Division of Scientific Programs, and Dr. Heather Bolstad, Toxicologist at the Office of Environmental Health Hazard Assessment (OEHHA), provided information on addressing unassessed chemicals and information on provisional health guidance values.

Ms. Rita Loof indicated that a meeting in October was mentioned and asked if additional meetings will be held to discuss this topic. Dr. Faust replied yes; it is expected to be a public process and the Lost Hills community health risk assessment will be presented to the community and available for public comment statewide.

Mr. John DeWitt asked how the data used will be accumulated. Dr. Bolstad replied that the health guidance values (HGVs) have been identified from various entities, including federal government agencies, occupational health bodies and international agencies, and the general quality and confidence of the values were based on how they were derived. Mr. DeWitt asked if data will be accumulated from the Lost Hills community. Dr. Bolstad replied that it is not part of this study, which includes air measurements and health risk predictions; however, a previous study was done and included surveys of the community. Mr. DeWitt inquired if the projections will be based on things other than what is going on in the Lost Hills community. Dr. Bolstad replied yes, but the HGVs used are from actual health effects data based on studies on exposure to humans and animals, intentionally or unintentionally. Specific incidents of certain health impacts in the Lost Hills community will not be used as part of this study and the town is too small for an epidemiological study.

Mr. David Rothbart expressed concern for the use of structural analogs that are likely to exaggerate the potential risks and how that will be used in the Assembly Bill (AB) 2588 program, which requires reporting of more than 12,000 compounds. Mr. Rothbart asked how OEHHA would propose reasonable estimates for so many compounds, considering that more compounds means being more conservative and are more likely to artificially exceed the threshold, where facilities will be required to achieve risk reductions. Dr. Faust replied that structural analogs are reviewed carefully, and the values are put in different compound classes. These are analyzed from a scientific perspective and does not apply additional uncertainty. As for the gap in the values for additional compounds added to the inventory, Mr. Gabe Ruiz from California Air Resources Board (CARB) will discuss that in the next presentation on AB 2588. OEHHA is developing a methodology that could be applied to additional compounds that are not in the Study of Neighborhood Air Near Petroleum Sources (SNAPS) program; it is a mechanism

constructed to fold in additional values for other compounds. Mr. Rothbart indicated that according to CARB, provisional values would not be used to calculate facility health risk, but only for informational purposes; however, it appears that provisional values were used in the health risks presented. Dr. Faust distinguished SNAPS and AB 2588 programs and clarified that the SNAPS program involves an effort to understand the chemicals measured in the air in the Lost Hills community and the decision context is not about determination of what facilities are required to do. Dr. Faust deferred to the next presentation on how CARB plans to use the provisional values in the AB 2588 context. Mr. David Edwards from CARB indicated that the questions may be addressed by Mr. Gabe Ruiz in the next presentation.

Mr. Bill LaMarr indicated that according to decision tree slides, if the HGV for a chemical analog is unknown, OEHHA will find other data as a substitute or a surrogate. Mr. LaMarr expressed concern that the Emission Inventory Criteria and Guidelines (EICG) includes many new compounds with unknown risk factors. Mr. LaMarr asked how many chemicals are included in OEHHA's regulations for oil production wells and what the timeline for the study is. Dr. Faust clarified that the SNAPS program is an investigation and not a regulation, and the purpose is to understand what chemicals are present in the air in the communities near oil and gas production sources. The current study was designed based on prior experience with the chemicals that were detected in other communities of this type, including approximately 200 chemicals. Mr. LaMarr expressed concern that if the results of this study were publicly available, it may cause fear since it was based on assumptions. Dr. Bolstad clarified that assumptions are not made for the surrogate approach as there is a similarity threshold of 0.8 in the software used, where 1 means identical. Only analog values from authoritative bodies for similar compounds are used. If there isn't a ranked value from one of the analogs, there isn't a value in the methodology used in SNAPS. The draft risk assessment will be available for public comment early next year. Mr. LaMarr asked about the Baldwin Hills community. Dr. Bolstad replied that monitoring should begin next year, they have already been in the site selection process and received public comment.

Ms. Loof indicated that this is a new methodology and chemicals with similar structures may not behave in the same way. Ms. Loof expressed concern about how it would affect the implementation of CARB's regulations. Dr. Bolstad replied that the use of structural surrogates has recently been referred to by new names, but it has been used for over 50 years. Not all surrogates have been tested and many assessments and regulations are based on similarities. It is a well-founded toxicological principle that structurally similar compounds exhibit similar toxicity.

Mr. Todd Campbell indicated that there are two sites now and asked if other sites will be included in the future. Dr. Bolstad replied that the plan for SNAPS is to conduct community monitoring for one year and complete a risk assessment for that community. The goal is to alternate between the Central Valley and Los Angeles area. The third community will be McKittrick and Derby Acres near Bakersfield, then South Los Angeles/Jefferson community. Mr. Campbell asked if additional studies will be conducted in other communities or the assessments will be based on data extrapolated from these studies. Dr. Bolstad replied that the studies will be useful for extrapolating as existing studies are in different regions, where the geology and practices are different. Mr. Campbell expressed appreciation for the studies.

Mr. Rothbart asked if the use of structural analogs has been validated. Dr. Bolstad replied that it is a well-founded principle and used by the United State Environmental Protection Agency (USEPA) to develop regulatory values. Mr. Rothbart expressed concern for unintended consequences for using this approach for thousands of compounds.

Agenda Item #5 – Using Provisional Health Values

Mr. Gabe Ruiz, Manager of the Air Toxics and Special Projects Section at the California Air Resources Board (CARB), presented on the anticipated use of provisional health values to support the AB 2588 Air Toxics "Hot Spots" program.

Mr. Rothbart indicated that the provisional values would be used to estimate risk in some programs and expressed concern for consistency. Mr. Ruiz explained that the health risk assessment under AB 2588, as defined in the statute, requires the use of OEHHA's approved values. This exercise is to obtain information on new chemicals and intended to help prioritize chemicals needing further review and for OEHHA to develop official health values. It would take some changes in state law to use any other values not fully vetted by OEHHA and the Scientific Review Panel (SRP).

Ms. Loof asked for clarification on non-regulatory provisional health values. Mr. Ruiz explained that AB 2588 says that the local air districts are responsible for implementing the program and CARB is responsible for developing the emissions inventory reporting guidelines. The local air districts prioritize and determine which facilities are exempt from reporting requirements and which facilities need to be included. CARB adds chemicals that need to be considered and quantified, and the local air districts use the provisional health values to determine exemption. Currently, the chemicals with provisional health values only need to be reported; however, once OEHHA develops official health values for those, then the facility would need to move into the next steps, which are prioritization and risk assessments.

Agenda Item #6 – Approval of Local Government & Small Business Assistance Advisory Group 2020 Accomplishments and 2021 Goals & Objectives

Mr. Alatorre presented and requested approval of the 2020 Accomplishments and for items to be included in the 2021 Goals & Objectives.

Ms. Loof commented on Proposed 2021 Goals & Objectives #10 – Update on Rule 219 and indicated that it is available now as the printing industry is using a hybrid system in which a portion of the existing operation is being converted to ultraviolet (UV) and achieving emissions reductions. However, due to the connection of the operation to a solvent system, the printing industry are excluded from the permitting exemption. Ms. Loof requested a report, similar to the Small Business Assistance Report format, including the number of UV and electron beam (EB) facilities required to apply for permits since the last Rule 219 amendment. Mr. Alatorre suggested that staff sends the requested report to the Advisory Group members instead of a presentation. Ms. Loof agreed, but expressed concern for the Brown Act compliance. Mr. Alatorre stated that it is similar to a typical information request and is included as an action item, which staff responds by providing the information to the members; however, he will confirm with staff from Legal department.

> ***Action Item #1****: Confirm with staff if providing requested reports to Advisory Group is acceptable. If so, provide information regarding number of permits issued for UV and EB equipment, as well as policy memos, if available.*

Ms. Loof thanked Chair Benoit for representing LGSBA at the Administrative Committee and suggested to add a goal to have one member of this Advisory Group to annually present the group's accomplishments to the Administrative Committee. Chair Benoit stated that he is on the Administrative Committee and represents the group. Ms. Loof agreed and expressed support for Chair Benoit's representation.

Ms. Loof mentioned EICG, Criteria Pollutant and Toxics Emissions Reporting (CTR), and CARB's activities and indicated South Coast AQMD is providing comments on these regulations. Ms. Loof asked Mr. Rothbart if it would be helpful to support South Coast AQMD by submitting a recommendation or position letter from this Advisory Group. Ms. Daphne Hsu stated that the topic could be agendized and the Advisory Group could then discuss what to provide comment on. Mr. Alatorre recalled Ms. Nancy Feldman stating that the Advisory Group cannot submit a support letter for an item, but could do so as individuals. Ms. Elaine Hills indicated that the LGSBA charter was revised to allow for the Advisory Group to provide comment as a group. Mr. Alatorre stated that staff will confirm the details and send an email to the Advisory Group members. Ms. Hsu indicated that it could also depend on how the letter is drafted and what information is included. Chair Benoit stated that the issue raised by Mr. Rothbart could be agendized and discussed. Mr. Rothbart suggested to have a discussion with staff on this issue at a future meeting.

> ***Action Item #2****: Clarify procedures for the advisory group to provide support for items and provide updated LGSBA Charter.*

Chair Benoit and Mr. LaMarr discussed the Home Rule Committee.

Mr. LaMarr expressed support for Proposed 2021 Goals & Objectives #1 and proposed to add a presentation on the Compliance & Enforcement programs and policies, including inspections, fines, and notices on the Facility Information Detail (FIND) tool. Mr. LaMarr also proposed to add a presentation to provide an update next year on the two presentations by OEHHA and CARB.

Ms. Loof expressed support for Mr. LaMarr's proposals and requested that policy memos also be added to her request regarding the number of permits issued for UV and EB equipment.

Mr. Rothbart proposed to add a presentation regarding updates on USEPA's Emissions During Periods of Startup, Shutdown, & Malfunction (SSM) provisions.

Agenda Item #7 – Monthly Report on Small Business Assistance Activities
No comments.

Agenda Item #8 - Other Business
No other business.

Agenda Item #9 - Public Comment
No comments.

Agenda Item #10 – Next Meeting Date
The next regular Local Government & Small Business Assistance Advisory Group meeting is scheduled for Friday, January 15, 2021 at 11:30 a.m.

Adjournment
The meeting adjourned at 12:57 p.m.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 23

REPORT: Investment Oversight Committee

SYNOPSIS: The Investment Oversight Committee held a meeting remotely on Friday, February 19, 2021. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Michael A. Cacciotti, Chair
Investment Oversight Committee

SJ:tm

Committee Members

Present: Council Member Michael Cacciotti, Chair
Senator Vanessa Delgado (Retired)
Brent Mason
Patrick Pearce

Absent: Dr. William A. Burke, Vice Chair
Richard Dixon

Call to Order

Council Member Michael Cacciotti called the meeting to order at 12:04 p.m.

DISCUSSION ITEMS:

1. *Quarterly Report of Investments:* The Committee reviewed the quarterly investment report that was provided to the Board. By December 31, 2020, the South Coast AQMD's weighted average yield on total investments of $969,901,663.92 from all sources was 0.54 percent. The allocation by investment type was 96.0 percent in the Los Angeles County Pooled Surplus Investment Fund (PSI) and 4.0 percent in the State of California Local Agency Investment Fund (LAIF) and South Coast AQMD's Special Purpose Investments (SPI). The one-year Treasury Bill rate as of December 31, 2020 was 0.1 percent.

2. *Financial Market Update*: Richard Babbe from PFM Asset Management provided information on current overall economic conditions. Compared to the 3rd quarter of 2020, the 4th quarter showed decreased economic momentum, including in the areas of retail sales and business investments, most likely due to an increase in the number of COVID-19 cases. Mr. Babbe indicated that he is hopeful that by the summer of 2021, wider spread distribution of the vaccine may help shorten the duration of the pandemic. However, Mr. Babbe did note that the Centers for Disease Control and Prevention predicts that it will take at least seven years for the pandemic to end on a global scale. Overall, consumer confidence, retail, and manufacturing were down in the 4th quarter. Due to historically low federal interest rates however, home sales were still up.

   U.S. unemployment at the end of 2020 was still high, at 6.7 percent, but California's unemployment rate for the same time period was even higher at 9 percent, as compared to 3.9 percent at the end of 2019, which indicates that full recovery is still a long way off. One positive sign was that, generally, disposable income had increased. This was mainly due to the federal stimulus package. By the end of 2021, it is predicted that the economy will grow by 4.2 percent but that it will take until 2023 for it to get to the pre-pandemic level. Inflation expectations are rising.

ACTION ITEM:

3. *Approval of Annual Investment Policy and Delegation of Authority to Los Angeles County Treasurer to Invest South Coast AQMD funds:* The South Coast AQMD adopts an Annual Investment Policy which, if done, is required to be considered at a public meeting of the Board. The following revision to the Annual Investment Policy was recommended: changes to the *Implementation* to be consistent with the Los Angeles County's "Delegation of Authority to Invest and Annual Adoption of the Treasurer and Tax Collector Investment Policy." State law also requires the South Coast AQMD to annually renew its delegation of authority to its treasurer, the Los Angeles County Treasurer, to invest or to reinvest funds of the local agency. Staff recommended renewal of this delegation of authority.

   Moved by Delgado; seconded by Mason; unanimously approved.

OTHER MATTERS:

4. **Other Business**
   There was no other business.

5. **Public Comment Period**
   There were no public comments.

6. **Next Meeting Date**
   The next regular meeting of the Investment Oversight Committee is scheduled for May 21, 2021 at noon.

Adjournment
The meeting adjourned at 12:45 p.m.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 24

REPORT: Legislative Committee

SYNOPSIS: The Legislative Committee held a meeting remotely on Friday, February 12, 2021. The following is a summary of the meeting.

Agenda Item	Recommendation/Action
H.R. 283 (Schweikert and Cardenas) Crowdsourcing of Environmental Data Act of 2021	Work With Authors
S. 101 (Markey and Duckworth) Environmental Justice Mapping and Data Collection Act of 2021	Support With Amendments

RECOMMENDED ACTIONS:
Receive and file this report, and approve agenda items as specified in this letter.

Michael A. Cacciotti, Chair
Legislative Committee

DJA:LTO:PFC:sd:ar

Committee Members

Present: Mayor Pro Tem Michael A. Cacciotti/Chair
Council Member Joe Buscaino/Vice Chair
Senator Vanessa Delgado (Ret.)
Supervisor V. Manuel Perez
Supervisor Janice Rutherford

Absent: Dr. William A. Burke

Call to Order
Chair Cacciotti called the meeting to order at 9:00 a.m.

DISCUSSION ITEMS:

1. **Update on Federal Legislative Issues**

   South Coast AQMD's federal legislative consultants (Carmen Group, Cassidy & Associates, and Kadesh & Associates) each provided a written report on key Washington, D.C. issues.

   Gary Hoistma of Carmen Group focused on transportation and infrastructure, which is the next priority legislative issue for Congress and the Administration after COVID-relief. It was reported that Congress is optimistic that a transportation and infrastructure bill will be completed this year. The Senate may hold their first hearing in late February and are seeking input from other members of Congress. The Committee on Environmental and Public Works Chair Senator Carper has stated that the Senate may complete work on a bill by Memorial Day with final passage by July 4. The transportation and infrastructure bill is critical for South Coast AQMD to support point-of-sale incentives for clean heavy-duty trucks, infrastructure to support electric, hydrogen and natural gas heavy-duty trucks and transportation electrification.

   Council Member Buscaino inquired if the transportation and infrastructure bill would include funding for disadvantaged communities near ports. Mr. Hoistma confirmed that environmental justice (EJ) would be included in the transportation and infrastructure bill and has been a priority in the President's Executive Orders. Council Member Buscaino also noted that this could be an opportunity to secure clean energy infrastructure investments for EJ communities.

   Jed Dearborn of Cassidy & Associates updated the committee on the COVID-relief bill known as the American Rescue Plan. The Oversight Committee bill includes $350 billion in assistance for state and local governments and $195 billion would be directed to states. States would have the authority to transfer funds to special purpose units of state or local government, which could include South Coast AQMD and other air pollution agencies. Efforts are underway to ensure the Senate version of the bill includes assistance for special districts. The Energy and Commerce Committee bill includes $100 million for U.S. EPA - $50 million focused on grants, contracts and initiatives that advance EJ purposes and $50 million to fund activities under Section 103 under the Clean Air Act which includes grants for local air pollution control agencies. It is expected that the provisions will remain in the overall reconciliation package to be passed by the House and sent to the Senate for consideration.

   Chair Cacciotti inquired about the $50 million for air pollution control agencies and asked how many of these agencies exist throughout the nation. Mr. Dearborn responded that the funding for air pollution control districts would flow through the U.S. EPA Section 103 program. Mr. Wayne Nastri responded that there are 35 air

pollution control agencies in California and throughout the nation there are over 100 similar agencies.

Mr. Kadesh reported that the appropriations process is off to a slower start this year due to Congress' focus on the COVID-relief and transportation and infrastructure packages. Normally a budget would be released in early February, but this year the overall spending numbers will be available in March and a full budget with details will be released in May.

2. Update on State Legislative Issues

Consultants Resolute, California Advisors, LLC, and Joe A. Gonsalves & Son provided written reports on key issues in Sacramento.

David Quintana of Resolute reported that the state Senate recently released their committee hearing schedule for the legislative year. Senate committees relevant to South Coast AQMD, such as the Environmental Quality Committee and the Transportation Committee, will begin hearings in mid-March.

Supervisor Rutherford asked about efforts to seek redesignation of South Coast AQMD as an independent special district. Mr. Quintana responded that South Coast AQMD representatives have reached out to State Controller Betty Yee's office regarding this issue. Derrick Alatorre, Deputy Executive Officer of Legislative, Public Affairs and Media, explained that a change in the designation for South Coast AQMD might facilitate the agency's ability to receive federal relief funding expected to be provided through federal legislative action.

Ross Buckley of California Advisors, LLC reported that the Governor released his 2021-22 proposed state budget about a month ago and the Legislature is reviewing it through the budget subcommittees process. The Senate and Assembly budget subcommittees are expected to hear issues relating to CARB and other priority issues for air districts in the coming weeks. The budget subcommittees are vetting these issues and final decisions will be made later in the year.

The Governor announced that the state collected an additional $10 billion more than what was included in his January budget proposal. December and January tax revenue was substantially higher than anticipated. The Governor indicated that this additional money will go to small businesses, vaccine distribution and reopening schools. After the Prop. 98 guarantee for education, and the rainy-day fund obligations are satisfied from this additional $10 billion, there will be about $4 billion remaining. Overall, the state has received approximately $20 billion more in revenue than was anticipated.

Paul Gonsalves of Joe A. Gonsalves & Son reported that Senate President Pro Tem Toni Atkins announced the members of the Senate Democratic Caucus leadership team and changes to Senate standing committee assignments. The leadership team includes:

- Sen. Robert Hertzberg, Majority Leader
- Sen. Mike McGuire, Assistant Majority Leader
- Sen. Connie Leyva, Caucus Chair
- Sen. Lena Gonzalez, Majority Whip
- Sen. Maria Elena Durazo, Assistant Majority Whip
- Sen. Susan Rubio, Assistant Majority Whip
- Sen. Scott Wiener, Assistant Majority Whip

Changes to Senate standing committee assignments relevant to South Coast AQMD include:

- Budget and Fiscal Review: Sen. Shannon Grove replaced Sen. Scott Wilk
- Natural Resources and Water: Sen. Grove replaced Sen. Andreas Borgeas
- Rules: Sen. Grove replaced Sen. Wilk, and Sen. Patricia Bates is the new vice chair

Supervisor Rutherford asked about AB 426, relating to a statewide indirect source rule, inquiring if staff has analyzed the bill and when it will be brought before the Committee. Barbara Baird, Chief Deputy Counsel, responded that the bill was reviewed by staff and that we are awaiting changes to the bill language. Mr. Philip Crabbe III, Public Affairs Manager, responded that this bill will be discussed internally and discussed the bill with its sponsor, the Bay Area AQMD. Senator Delgado requested that AB 426 be sent out to the committee members. Supervisor Rutherford requested that AB 426 be placed on the March committee agenda. Chair Cacciotti agreed with this request. Mr. Nastri added that staff has been in discussions with Bay Area AQMD to ensure that AB 426 does not conflict with South Coast AQMD's indirect source rule authority. Mr. Nastri stated that AB 426 will be placed on the March committee agenda.

Chair Cacciotti inquired about Joe A. Gonsalves & Son's written report as it relates to AB 617 budget funding. He emphasized the significant resources to implement the AB 617 program . Mr. Gonsalves responded that $50 million is not sufficient to fund statewide program implementation. Recent efforts to communicate this to the Legislature include a meeting with Assembly Member Luz Rivas, who sits on the Assembly Budget subcommittee addressing environmental issues. Additional legislative meetings are coming up as well. Mr. Nastri emphasized that seeking increased AB 617 funding has been a top priority for years. The AB 617 program has been consistently underfunded since its inception, especially with new communities being added. He reported that there have been recent discussions about

this funding need with Assembly Members Cristina Garcia and Eduardo Garcia. Mr. Nastri reminded the committee that resources are needed for multiple aspects of AB 617, including actions in the community, BARCT rulemaking, and creating emissions inventories. Further, communities are also seeking funding for their efforts in helping implement AB 617, and staff is pursuing an additional $3-$5 million for that purpose. Sustained funding for AB 617 efforts is critical because it is an ongoing program focused on benefitting disadvantaged communities.

Supervisor Perez asked about the responses by Assembly Members C. Garcia and E. Garcia. He suggested the possibility of a joint meeting with members that include AB 617 communities to provide more education on the program and its funding need, and to possibly form a task force to address the issue, to create an additional base of support. Mr. Nastri responded that Assembly Member E. Garcia was supportive of $3-$5 million in funding for community members. He also requested that South Coast AQMD work to recruit more legislative support for the AB 617 funding effort, including talking to the numerous legislators that previously signed on to a letter in support of AB 617 funding that Assembly Member E. Garcia helped lead last year. Assembly Member C. Garcia has been a champion of this AB 617 effort, and encouraged South Coast AQMD to reach out to other legislators, including budget committee members, and noted that she is working to build a coalition of support. Staff will continue to pursue outreach to the Governor's Office and to the Legislature, with budget committee members or members with or without AB 617 communities in their districts. Supervisor Perez also suggested possibly requesting a legislative hearing in Sacramento to highlight these funding needs. Mr. Nastri mentioned that staff has pursued a possible legislative hearing.

Supervisor Rutherford inquired if the two new AB 617 positions in LPAM are funded from South Coast AQMD's general fund or through state funding. Sujata Jain, Chief Financial Officer and Mr. Alatorre responded that both postions will be paid through the general fund.

Supervisor Rutherford inquired if the Bay Area AQMD is including a state funding component in AB 426 to support air districts' efforts relating to indirect source rules. Mr. Crabbe responded that the bill is currently focused on indirect source rule authority and not on funding. Mr. Nastri stated that staff can reach out to Bay Area AQMD to suggest that they include a state funding component in AB 426.

Harvey Eder, Public Solar Power Coalition, commented on federal and state legislation, stressing that it is important to have refundable tax credits relating to solar and renewables for low income people. He also commented on climate issues and indirect source rulemaking.

ACTION ITEMS:

3. Recommend Position on Federal Bills:

H.R. 283 (Schweikert and Cardenas) Crowdsourcing of Environmental Data Act of 2021

Lisa Tanaka O'Malley, Senior Public Affairs Manager, Legislative, Public Affairs & Media, presented H.R. 283 authored by Representatives David Schweikert and Tony Cardenas. The bill would amend the Clean Air Act to allow states to submit air monitoring data from air quality sensors, including mobile sensors, outside of the state and local air monitoring stations network. The alternative data must be measured by air monitoring equipment and methodologies that meet the federal standards.

There are challenges with existing low-cost sensors meeting federal standards. Instruments that meet federal standards require a substantial amount of maintenance, quality assurance, and quality control to ensure the data is accurate. Even if the current low-cost sensors were up to par with federal standards, it would be extremely difficult to maintain a network with hundreds of sensors deployed for regulatory purposes. The bill does not provide funding for the deployment of additional air monitoring sensor technologies in communities or address the need for funding for maintenance and operation.

Chair Cacciotti commented that in Orange County there is a facility that South Coast AQMD has monitored and another group has also collected data with differing results. Mr. Cacciotti pointed out that this bill could create a similar situation with conflicting data. Ms. Tanaka O'Malley responded that this type of issue would be important to discuss with the bill authors to ensure that there is a process to confirm air monitoring data is collected with equipment and methodologies that comply with federal standards.

Staff recommended a "WORK WITH AUTHORS" position on this bill.

Moved by Buscaino; seconded by Delgado; unanimously approved
Ayes: Buscaino, Cacciotti, Delgado, Perez, Rutherford
Noes: None
Abstain: None
Absent: Burke

S. 101 (Markey and Duckworth) Environmental Justice Mapping and Data Collection Act of 2021

Stacy Day, Legislative Assistant, Legislative, Public Affairs & Media, presented S. 101 authored by Senators Edward Markey and Tammy Duckworth. The bill would create an Interagency Environmental Justice (EJ) Committee consisting of

representatives from relevant agencies and would also create an Advisory Council of stakeholders. The Interagency Committee and Advisory Council would develop a plan for public engagement and incorporation of community feedback into the data and the resulting mapping tool. The bill would establish a Congressional finding that the mapping tool could assist in the effort to direct at least 40 percent of climate investment funding in EJ communities and would also authorize a total of $94 million over a five-year period for the mapping tool, outreach, and engagement.

Staff recommended a "SUPPORT WITH AMENDMENTS" position on this bill.

Moved by Perez; seconded by Buscaino; unanimously approved
Ayes: Buscaino, Cacciotti, Delgado, Perez, Rutherford
Noes: None
Abstain: None
Absent: Burke

Mr. Eder expressed concern about the definition of EJ in the bill. Mr. Alatorre responded that the bill includes a broad array of socioeconomic and demographic criteria to identify EJ communities. Chair Cacciotti noted that the bill included a long list of criteria.

OTHER MATTERS:

4. **Other Business**
   There was no other business.

5. **Public Comment Period**
   Mr. Eder commented about a previous South Coast AQMD Board meeting.

6. **Next Meeting Date**
   The next regular Legislative Committee meeting is scheduled for Friday, March 12, 2021 at 9:00 a.m.

Adjournment
The meeting adjourned at 10:01 a.m.

Attachments
1. Attendance Record
2. Update on Federal Legislative Issues – Written Reports
3. Update on State Legislative Issues – Written Reports
4. Recommend Position on Federal Bills

ATTACHMENT 1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
LEGISLATIVE COMMITTEE MEETING (VIA ZOOM)
ATTENDANCE RECORD – February 12, 2021

Council Member, Joe Buscaino	South Coast AQMD Board Member
Mayor Pro Tem Michael Cacciotti	South Coast AQMD Board Member
Senator Vanessa Delgado	South Coast AQMD Board Member
Supervisor V. Manuel Perez	South Coast AQMD Board Member
Supervisor Janice Rutherford	South Coast AQMD Board Member
Frank Cardenas	Board Consultant (Cacciotti)
Jacob Haik	Board Consultant (Buscaino)
Debra Mendelsohn	Board Consultant (Rutherford)
Mark Taylor	Board Consultant (Rutherford)
Ben Wong	Board Consultant (Cacciotti)
Ross Zelen	Board Consultant (Kracov)
Ross Buckley	California Advisors, LLC
Jed Dearborn	Cassidy & Associates
Paul Gonsalves	Joe A. Gonsalves & Son
Gary Hoitsma	Carmen Group, Inc.
Mark Kadesh	Kadesh & Associates
Ben Miller	Kadesh & Associates
David Quintana	Resolute
Mark Abramowitz	
Jessica Alvarenga	
Stephanie Bream	
Ramine Cromartie	
Ken Dami	
Peter Herzog	
Frances Keeler	CCEEB
Bill LaMarr	California Small Business Alliance
Amanda Meere	
David Rothbart	
Brissa Sotelo-Vargas	
Peter Whittingham	Whittingham Public Affairs Advisors
Derrick Alatorre	South Coast AQMD Staff
Debra Ashby	South Coast AQMD Staff
Barbara Baird	South Coast AQMD Staff
Naveen Berry	South Coast AQMD Staff
Philip Crabbe	South Coast AQMD Staff
Stacy Day	South Coast AQMD Staff
Amir Dejbakhsh	South Coast AQMD Staff
Iliana Garcia	South Coast AQMD Staff
Sheri Hanizavareh	South Coast AQMD Staff
Anissa (Cessa) Heard-Johnson	South Coast AQMD Staff
Mark Henninger	South Coast AQMD Staff
Sujata Jain	South Coast AQMD Staff
Cristina Lopez	South Coast AQMD Staff
Jason Low	South Coast AQMD Staff

Matt Miyasato	South Coast AQMD Staff
Ron Moskowitz	South Coast AQMD Staff
Wayne Nastri	South Coast AQMD Staff
Stacy Pruitt	South Coast AQMD Staff
Sarah Rees	South Coast AQMD Staff
Mary Reichert	South Coast AQMD Staff
Aisha Reyes	South Coast AQMD Staff
Angelica Reyes	South Coast AQMD Staff
Danielle Soto	South Coast AQMD Staff
Lisa Tanaka O'Malley	South Coast AQMD Staff
Anthony Tang	South Coast AQMD Staff
Maria Vides	South Coast AQMD Staff
Kim White	South Coast AQMD Staff
Jill Whynot	South Coast AQMD Staff
William Wong	South Coast AQMD Staff
Paul Wright	South Coast AQMD Staff
Victor Yip	South Coast AQMD Staff

ATTACHMENT 2A

Carmen Group
INCORPORATED

To: South Coast AQMD Legislative Committee

From: Carmen Group

Date: January 28, 2021

Re: Federal Update -- Executive Branch

Top Incoming Executive Branch Officials

The President	**Joseph Biden**	
The Cabinet		**Senate Vote**
Vice President	**Kamala Harris**	N/A
Secretary of State	**Antony Blinken**	78-22
Secretary of the Treasury	**Janet Yellen**	84-15
Secretary of Defense	**Lloyd Austin**	93-2
Attorney General	**Merrick Garland**	
Secretary of the Interior	**Deb Haaland**	
Secretary of Agriculture	**Tom Vilsack**	
Secretary of Labor	**Marty Walsh**	
Secretary of HHS	**Xavier Becerra**	
Secretary of HUD	**Marcia Fudge**	
Secretary of Transportation	**Pete Buttigieg**	
Secretary of Energy	**Jennifer Granholm**	
Secretary of Education	**Miguel Cardona**	
Secretary of VA	**Denis McDonough**	
Secretary of DHS	**Alejandro Mayorkas**	
Administrator of the EPA	**Michael Regan**	
Director of OMB	**Neera Tanden**	
Director of DNI	**Avril Haines**	84-10
US Trade Representative	**Katherine Tai**	
US Ambassador to the UN	**Linda Thomas-Greenfield**	
Chair of Economic Advisors	**Cecelia Rouse**	N/A
Administrator of the SBA	**Isabel Guzman**	
Presidential Science Advisor	**Eric Lander**	N/A
Chief of Staff	**Ron Klain**	N/A

The Executive Office of the President		
Council of Economic Advisors	**Cecilia Rouse**	N/A
Council on Environmental Quality	**Brenda Mallory**	N/A
Domestic Policy Council	**Susan Rice**	N/A
National Economic Council	**Brian Deese**	N/A
National Security Council	**Jake Sullivan**	N/A

Office of Intergovernmental Affairs	**Julia Chavez Rodriguez**	N/A
Office of Management and Budget	**Neera Tanden**	N/A
Office of Drug Control Policy		N/A
Office of Public Engagement	**Cedric Richmond**	N/A
Office of Science/Tech Policy	**Eric Lander**	N/A
Office of Domestic Climate Policy	**Gina McCarthy**	N/A

Federal Agency Roundup: Over the last month, the winding down of the outgoing administration and the ramping up of the incoming administration brought a flurry of activity in key federal agencies. Here are selected highlights of items of interest to SCAQMD:

Environmental Protection Agency *(Notable Appointments)*

Michael Regan, *Administrator*
(Sec., NC Dept. of Env. Quality) (Bush, Clinton EPA)
Janet McCabe, *Deputy Administrator*
(Indiana Univ. law prof., Obama EPA Air Office)
Dan Utech, *Chief of Staff*
(Obama WH and DOE, Sen. Clinton)
Alison Cassady, *Deputy Chief of Staff for Policy*
(House Climate Crisis Sel. Cmte., Center for American Progress)
Avi Garbow, *Senior Counselor to the Administrator*
(Patagonia's Environmental Advocate, Obama EPA)
Victoria Arroyo, *Associate Administrator for Policy*
(Georgetown Climate Center, Pew Center on Climate, Obama EPA)
Philip Fine, *Principal Deputy Associate Administrator for Policy*
(South Coast AQMD, CARB Research Screening Cmte., EPA CASAC)
Joseph Goffman, *Principal Dep. Asst. Administrator, Office of Air and Radiation*

EPA Finalizes First GHG Emissions Standards for Aircraft: In December, the EPA finalized emissions standards for airplanes used in commercial aviation and large business jets. This will align US standards with the international standards set by the International Civil Aviation Organization (ICAO).

EPA Finalizes Rule Increasing Science Transparency in Regulations: On January 5, the EPA finalized an internal rulemaking first proposed in April 2018 that it says will strengthen the transparency of its significant regulations. The rule establishes that EPA will give greater consideration to studies where the underlying data are available in a manner sufficient for independent verification. EPA Administrator Andrew Wheeler defended the rule in a *Wall Street Journal* op-ed (Jan. 4), admonishing critics: *"Please read the rule before you reflexively repeat tired misinformation or make another's interpretation of it your own."* On January 20, President Biden ordered that the rule be reviewed for elimination "as soon as possible."

EPA Releases Environmental Justice Report: On January 11, the EPA released its *Fiscal Year 2020 Environmental Justice Progress Report*, citing the agency's progress in advancing environmental justice for minority, low-income, tribal, and indigenous communities across the country.

EPA Finalizes Action on Air Pollution Leaks at Storage Tanks: On January 11, the EPA finalized regulatory flexibility action offering alternate, less cumbersome "in-service" methods of inspection for finding and correcting air pollution leaks at large liquid storage tanks to show compliance with the Clean Air Act. The action affects more than 3,500 petroleum, chemical and coal products manufacturing facilities and petroleum bulk stations and terminals.

EPA Provides Framework for GHG Emissions Regulations: On January 12, the EPA laid out a new significance framework providing criteria for how the agency will determine when stationary sources of greenhouse gases trigger a requirement to set New Source Performance Standards under the Clean Air Act.

EPA Honors SCAQMD in Recognizing Innovative Work on Clean Air Projects: On January 12, the EPA recognized seven groups and individuals as part of its 2020 Clean Air Excellence Awards. Among those honored was the South Coast Air Quality Management District, which won the Education/Outreach Award for its Mobile App, the official air quality app for residents of the South Coast Basin, providing residents with real-time air quality information for multiple cities right down to their neighborhood.

Department of Transportation *(Notable Appointments)*

Pete Buttigieg, *Secretary*
(Presidential Primary Candidate, Former Mayor of South Bend, IN)
Polly Trottenberg, *Deputy Secretary*
(NYC DOT, Obama DOT, Sen. Schumer, Sen. Boxer)
Nuria Fernandez, *Federal Transit Administration, Deputy Administrator*
(CEO, Santa Clara Valley Transportation Authority)
Steve Cliff, *National Highway Traffic Safety Admin., Deputy Administrator*
(Dep. Exec. Officer, California Air Resources Board)
Amit Bose, *Federal Railroad Administration, Deputy Administrator*
(HNTB, Obama DOT/FRA, Sen. Menendez, NJ DOT)
Stephanie Pollack, *Federal Highway Administration, Deputy Administrator*
(Sec., Massachusetts DOT, MIT, Harvard Law
Meera Joshi, *Federal Motor Carrier Safety Admin., Deputy Administrator*
(NYC Taxi & Limo Commission)
Lucinda Lesley, *Maritime Administration, Deputy Administrator*
(Staff, House Homeland and Oversight committees, Rep. Cummings)
A. Bradley Mims, *Federal Aviation Administration, Deputy Administrator*
(CEO, Conf. of Minority Transportation Officials, Clinton FAA)

USDOT Releases Automated Vehicles Plan: On January 11, the Department of Transportation released its Automatized Vehicles Comprehensive Plan laying out a strategy to prepare the Nation's transportation system for the safe integration of Automated Driving Systems.

FRA Announces Full PTC Implementation: The Federal Railroad Administration announced in December that positive train control (PTC) technology (designed to prevent train-to-train collisions and speeding derailments) became operational on all 57,536 required freight and passenger route miles in the U.S. in time to meet the Dec. 31, 2020,

deadline set by Congress pursuant to the Rail Safety Improvement Act of 2008 and subsequent amendments.

NHTSA Consent Order with Daimler Trucks Over Safety Issues: The National Highway Traffic Safety Administration announced in December a consent order with Daimler Trucks North America following an investigation that found the company failed to recall vehicles and failed to comply with reporting requirements in a timely fashion to address safety defects. The order includes a total civil penalty of $30 million.

Department of Energy *(Notable Appointments)*

Jennifer Granholm, *Secretary*
(Former Governor of Michigan)
Tarak Shah, *Chief of Staff*
(Obama DOE)
Christopher Davis, *Senior Advisor to the Secretary*
(Obama WH and DOE, House Oversight and E&C Committees)
Kelly Speakes-Backman, *Principal Deputy Assistant Secretary for EERE*
(CEO, Energy Storage Association)
Shar Mohtadi, *Chief of Staff, Office of EERE*
(America's Pledge Initiative on Climate, Obama WH and OMB
Vanessa Chan, *Director, Office of Technology Transitions (Commercialization)*
(University of Pennsylvania, Engineering Dept.)
Shalanda Baker, *Deputy Director for Energy Justice*
(Northeastern Univ. Law Prof., former Air Force officer)
Tanya Das, *Chief of Staff, Office of Science*
(House Science/Space/Tech Committee, Univ. of California, SB)
Ali Nouri, *Principal Deputy Assistant Secretary*
(Frmr Pres., Fed. of American Scientists, Sen. Webb, Sen. Franken)
Jennifer Wilcox, *Principal Deputy Assistant Secretary for Fossil Energy*
(University of Pennsylvania, Prof. of Chemical Engineering)
Avi Zevin, *Deputy General Counsel for Energy Policy*
(Attorney on Electricity Policies, NY Univ. School of Law

DOE Announces Project to Advance Oil and Gas Emissions Monitoring: On January 12, the Department of Energy announced seven new projects as part of the ARPA-E Seeding Critical Advances for Leading Energy technologies with Untapped Potential (SCALEUP) program. One of these included $5 million for a proposal for the largest continuous emissions monitoring network for the oil and gas industry. The network would be able to locate and monitor natural gas emissions in real time across 700 square miles of the Permian Basin in the Southwest U.S. Potential impacts include reducing oil and gas production emissions by 60-80% basin wide.

DOE Announces Funds Available for Hydrogen Research: On January 15, the Department of Energy announced plans to make $160 million available for projects aimed to develop technologies for the production, transport, storage and utilization of fossil-based hydrogen, with progress towards net-zero carbon emissions.

White House Staff -- Climate Team (Notable Appointments)

Gina McCarthy, *Office of Domestic Climate Policy, Dir. (Nat. Climate Advisor)*
(Pres., Natural Resources Defense Council; Obama EPA Administrator)
Maggie Thomas, *Office of Domestic Climate Policy, Chief of Staff*
(Inslee, Warren Campaigns Climate Advisor, Evergreen Action)
David Hayes, *Special Assistant to the President for Climate*
(NYU State Energy/Env. Center; Clinton, Obama Interior Dept.)
Sonia Aggarwal, *Senior Advisor for Climate Policy and Innovation*
(Energy Innovation, ClimateWorks Foundation)
Jahi Wise, *Senior Advisor for Climate Policy and Finance*
(Biden Campaign, Coalition for Green Capital, BlocPower)
Cecilia Martinez, *CEQ, Senior Director for Environmental Justice*
(Biden Campaign, Exec. Dir., Center for Earth, Energy, Democracy)
Jeff Marootian, *Office of Presidential Personnel, Sp. Asst. for Climate/Science*
*(*Dir., DC Dept. of Transportation, Obama DOT)

Biden Executive Orders on Climate

Among the Administration's opening salvo of nearly 40 executive orders issued during its first days in office, those with probably most significance for South Coast AQMD are the two specifically addressing Climate Change. Here are detailed summaries of key highlights:

Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis

(January 20) (22-pages)

- Declares it is the policy to the Administration to:
  --Listen to the science
  --Improve public health and protect our environment
  --Ensure access clean air and water
  --Limit exposure to dangerous chemicals
  --Hold polluters accountable
  --Reduce greenhouse gas emissions
  --Bolster resilience to the impacts of climate change
  --Restore and expand national treasures and monuments
  --Prioritize environmental justice and union jobs

- Orders federal agencies to immediately review (and consider eliminating or changing) all Trump agency actions and rules deemed in conflict with these policies, including especially the following:
  --SAFE Rule Part One (by April 2021)
  --SAFE Rule Part Two (by July 2021)
  --Emissions Standards for Hazardous Air Pollutants (by August 2021)
  --EPA Costs Benefits in Clean Air Act Rule (As Soon as Possible)
  --EPA Transparency in Science Rule (As Soon as Possible)

- Orders EPA to:
  --Propose new oil and gas emissions regulations (by Sept. 2021)
  --Propose a FIP for CA (and others) re: ozone standards (by Jan. 2022)

- Orders Department of the Interior to:
  --Review appropriateness of Trump-set monument boundaries
  --Revoke ANWR and Northern Bering Sea oil/gas drilling orders

- Creates the "Interagency Working Group on the Social Cost of Greenhouse Gases", co-chaired by WH officials:
  --To estimate/publish (by Jan. 2022) monetized global damages for:
    --Social cost of carbon (SCC)
    --Social cost of nitrous oxide (SCN)
    --Social cost of methane (SCM)

- Revokes Keystone XL pipeline permit

- Revokes other Presidential executive orders and memorandums including:
  --Expediting Environmental Reviews for Infrastructure Projects
  --Reviewing "Waters of the United States" Rule
  --Promoting Energy Independence and Economic Growth
  --Review Designations Under the Antiquities Act
  --America-First Offshore Energy Strategy
  --Promoting Energy Infrastructure and Economic Growth
  --Expediting Infrastructure Investments and Other Activities
  --Establishing Discipline in the Environmental Review Process
  --Promoting Domestic Manufacturing Policies Relating to Clean Air Act
  --Promoting the Reliable Supply and Delivery of Water in the West
  --Developing and Delivering More Water Supplies in California

Executive Order on Tackling the Climate Crisis at Home and Abroad
(January 27) (54 pages)

- Declares it is Administration policy:
  --That climate considerations will be an essential element of U.S. foreign policy and national security policy;
  --To conform with the Paris Climate Agreement's three overarching objectives:
    --"A safe global temperature"
    --"Increased climate resilience"
    --"Financial flows aligned with a pathway toward low greenhouse gas emissions and climate-resilient development."

- The Administration will:
  -- Create new post: "Special Presidential Envoy for Climate" (John Kerry)
  --Host a Leader's Climate Summit (April 22)
  --Pay the US contribution under the Paris Agreement

--Reconvene the "Major Economies Forum on Energy and Climate"
--Develop a "Climate Finance Plan" to assist developing countries
--Seek Senate ratification of the Kigali Amendment (phasedown of HFCs)
--Prioritize climate in foreign policy and national security policy
--Develop a plan to promote protection of the Amazon rain forest
--Identify steps to end international financing of fossil fuel energy
--Identify steps for international collaboration on clean energy tech.
--Require agencies to weigh climate considerations in international work
--Prepare a National Intelligence Estimate on climate nat. security impacts
--Prepare a "Climate Risk Analysis" for use in National Defense Strategy

- Declares it is Administration policy:
  --To implement a Government-wide approach that reduces climate pollution in every sector of the economy.

- Creates a new office: "White House Office of Domestic Climate Policy" headed by a "National Climate Advisor" (Gina McCarthy) with which all federal agencies "shall cooperate and provide such information, support and assistance to the Office as it may request."

- Creates new "National Climate Task Force" consisting of all major federal agencies, chaired by the National Climate Advisor, to "facilitate planning and implementation of key Federal action to reduce climate pollution, increase climate resilience, protect public health, conserve our lands, waters, oceans and biodiversity, deliver environmental justice and spur well-paying jobs."

- Establishes a "Federal Clean Electricity and Vehicle Procurement Strategy" that will facilitate a plan for:
  --A carbon-free electricity sector by 2035
  --Purchasing clean and zero-emission vehicles for federal, state, local and tribal government fleets including vehicles of the USPS.
  --Spurring union jobs in the manufacture of those new vehicles.

- Requires agencies to ensure that "federal funding is not directly subsidizing fossil fuels" and that -- starting with FY 2022 -- fossil fuel subsides will be eliminated from Administration budget requests.

- Requires agencies to ensure that Federal funding is used to spur innovation, commercialization, and deployment of clean energy technologies and infrastructure.

- Establishes the "Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization", co-chaired by National Climate Advisor and housed at the Department of Energy.

- Creates the "White House Environmental Justice Interagency Council" chaired by the Chair of the Council on Environmental Quality.

- Creates the "White House Environmental Justice Advisory Council" (members appointed by the President) to advise the White House Environmental Justice Interagency Council.

- Requires CEQ to create a geospatial "Climate and Economic Justice Screening Tool" and publish interactive maps highlighting disadvantaged communities

- Requires EPA to strengthen enforcement of environmental violations impacting EJ communities; create a community notification program to monitor and provide data on current environmental pollution in frontline and fenceline communities.

- Requires Attorney General to rename the Environmental and Natural Resources Division the "Environmental Justice and Natural Resources Division," develop a comprehensive environmental justice enforcement strategy, and consider creating a new 'Office Environmental Justice'."

- Requires HHS to create an "Office of Climate Change and Health Equity," establish an "Interagency Working Group to Decrease Risk of Climate Change to Children, the Elderly, People with Disabilities, and the Vulnerable," and a biennial "Health Care System Readiness Advisory Council."

- Requires the Office of Science and Technology Policy to publish a report identifying the climate strategies and technologies that will result in the most air and water quality improvements.

- Requires CEQ, OMB and National Climate Advisor to publish recommendations on how certain clean energy Federal investments might be made toward a goal that 40 percent of the overall benefits flow to disadvantaged communities.

- Requires OMB to publish on a public website an annual "Environmental Justice Scorecard" detailing agency environmental justice performance measures.

Outreach: Contacts included the office of Sen. James Inhofe, the U.S. Chamber of Commerce, the Alliance for Vehicle Efficiency, and CALSTART on clean energy, electric vehicles, climate-related transition issues and upcoming legislation.

###

ATTACHMENT 2B

CASSIDY | ASSOCIATES

To: South Coast Air Quality Management District
From: Cassidy & Associates
Date: January 26, 2021
Re: January Report

HOUSE/SENATE

Joseph R. Biden, Jr. was sworn in as the 46th President of the United States on January 20th. During his first 100 days in office, President Biden will focus on leveraging executive authorities in order to combat COVID-19, reverse Trump Administration policies, advance action on climate, equity, and immigration, and confirm Cabinet nominees.

The Senate is continuing to negotiate on a power-sharing agreement, and both House and Senate committee assignments are still in flux.

House

During the week of January 25th the House will meet for a Committee Work Week. During the week of February 1st, the House is not expected to be in session.

On Monday, January 25th, Speaker Pelosi transmitted the articles of impeachment to the Senate. The full press release can be read here. The Senate impeachment schedule is as follows:

- Monday, January 25th: Managers present article
- Tuesday, January 26th: Senators sworn in as jurors
- Monday, February 8th: Oral arguments begin
- Tuesday, February 9th: Trial begins

Senate

The Senate will continue to confirm Cabinet nominees while the impeachment managers and former President Trump's team prepare for the trial.

Cabinet nominees include:

- Secretary of State: Antony Blinken (Confirmed)
- Treasury: Janet Yellen (Confirmed)
- Defense: Lloyd Austin (Confirmed)
- Attorney General: Merrick Garland
- Homeland Security: Alejandro Mayorkas (Nomination Hearing 1/19)
- Veterans Affairs: Denis McDonough (Nomination Hearing 1/27)
- Health and Human Services: Xavier Becerra
- Energy: Jennifer Granholm (Nomination Hearing 1/27)
- Interior: Deb Haaland
- Transportation: Pete Buttigieg (Nomination Hearing 1/21)
- Commerce: Gina Raimondo (Nomination Hearing 1/26)
- Labor: Marty Walsh
- Agriculture: Tom Vilsack
- Housing & Urban Dev: Marcia Fudge (Nomination Hearing 1/28)
- Education: Miguel Cardona

Other Administration Officials

- White House Chief of Staff: Ron Klain
- White House OMB Director: Neera Tanden
- Office of Science & Tech Policy Director: Eric Lander
- EPA Administrator: Michael Regan
- Director of National Intelligence: Avril Haines (Confirmed)
- USTR: Katherine Tai
- SBA Administrator: Isabel Guzman
- Ambassador to the UN: Linda Thomas-Greenfield (Nomination Hearing 1/27)
- Special Presidential Envoy for Climate: John Kerry

<u>Administration Priorities</u>

The Administration's first priority is to organize a federal response to the growing COVID-19 outbreak. During the first 100 days President Biden will focus on working collaboratively with states to provide clear guidance about a national testing and vaccination strategy to get Americans vaccinated more quickly and ensure adequate testing.

Earlier this month President Biden unveiled his "America Rescue Plan," a proposed $1.9 trillion legislative package that includes funding for direct payments to individuals, expanded unemployment insurance, small business funding, state and local aid, and funding for vaccine distribution, among other proposals. The Biden Administration will need to work closely with leaders of both parties in the narrowly-divided House and Senate to pass a major aid package. If they are unable to attract enough Republican votes, they will likely pursue legislation through budget reconciliation, which avoids the filibuster in the Senate and requires only a majority vote for passage.

To take immediate Administrative action on the COVID-19 National Strategy, President Biden has already signed dozens of executive orders to strengthen the public health supply chain, mandate masks on federal property and on domestic flights, safely reopen schools, expand testing, protect workers, and create a Coordinator of the COVID-19 Response and Counselor to the President position (Jeff Zients) to coordinate the "Federal Government's efforts to produce, supply, and distribute personal protective equipment, vaccines, tests, and other supplies."

Biden has also nominated a team to lead the Federal government's health care agencies, and who have also held leadership roles on his Coronavirus Task Force.

They include:

- Dr. Vivek Murthy – nominated to be U.S. Surgeon General;
- Dr. Rochelle Walensky – nominated to lead the Centers for Disease Control; and
- Dr. Anthony Fauci – who will continue as head of the National Institute for Allergies and Infectious Diseases.

President Biden has signed 30 executive orders during his first three days of taking office. The orders included various actions to combat COVID-19, repealing some actions the Trump Administration had taken, rejoining the Paris Climate Agreement, cancelling the Keystone XL Pipeline, freezing drilling in the Arctic refuge, and orders reaffirming his administration's commitment to scientific data as a basis for decision making. President Biden has a full schedule of further executive orders planned to kickstart his agenda. Monday, January 25th was billed as "Buy American Day," with executive orders targeted at strengthening the requirements for procuring goods and services from sources that will support American businesses and workers. President Biden also signed an executive order repealing the Trump Administration's ban on transgender troops.

Tuesday, January 26th focused on equity with executive orders that create a policing commission and reinstate Obama-era policy on the transfer of military-style equipment to local law enforcement, establish steps to improve prison conditions and eliminate the use of private prisons, and formally disavow discrimination against the Asian American and Pacific Islander community. The President also signed a memorandum directing Housing and Urban Development to take steps to promote equitable housing politics.

Wednesday, January 27th will be climate day, with an expected executive order initiating regulatory actions to combat climate change domestically, along with a memorandum on scientific integrity.

Thursday, January 28th is set to be a health care themed day. President Biden is set to rescind the Mexico City Policy and review the Title X "Domestic Gag Rule." There may also be an executive Action on Medicaid, as well as the initiation of open enrollment under the Affordable Care Act.

Friday, January 29th will be centered on immigration with executive orders on regional migration and border processing, the U.S. refugee policy and the establishment of a family reunification task force, as well as an executive order directing immediate review of the Public Charge Rule.

Environmental Protection Agency

The EPA has announced key members of the agency's incoming leadership team. The team was sworn in on January 20th and includes:

- Radha Adhar, Deputy Associate Administrator for Congressional Affairs
- Victoria Arroyo, Associate Administrator for Policy
- Tomás Elias Carbonell, Deputy Assistant Administrator for Stationary Sources, Office of Air and Radiation
- Alison Cassady, Deputy Chief of Staff for Policy
- Dimple Chauhary, Deputy General Counsel for Nationwide Resource Protection Programs
- Rosemary Enobakhare, Associate Administrator for Public Engagement and Environmental Education
- Philip Fine, Principal Deputy Associate Administrator for Policy
- Radhika Fox, Principal Deputy Assistant Administrator, Office of Water
- Michal Ilana Freedhof, Principal Deputy Assistant Administrator for Chemical Safety and Pollution Prevention
- Joseph Goffman, Principal Deputy Assistant Administrator, Office of Air and Radiation
- Lindsay Hamilton, Associate Administrator for Public Affairs
- Sinceré Harris, White House Liaison
- Melissa Hoffer, Principal Deputy General Counsel
- Casey Katims, Deputy Associate Administrator for Intergovernmental Affairs
- John Lucey, Special Assistant to the Administrator
- Dan Utech, Chief of Staff

Cassidy and Associates support in January:

- Collected intel on the Administration's and Congressional Leadership's plan for COVID relief and infrastructure legislation, specifically with respect to whether such legislation will be pursued through reconciliation and the expected content of such legislation.
- Advocated to key Committee and leadership staff for inclusion of state and local funding and other SCAQMD priorities in COVID relief legislation.
- Participated in weekly strategy meetings with SCAQMD staff.

PANDEMIC RESPONSE PROGRAMS AND AUTHORITIES

The FDA is reissuing the Emergency Use Authorizations (EUAs) for decontamination systems that are authorized to decontaminate compatible N95 respirators for use by healthcare personnel (HCP) to prevent exposure to pathogenic biological airborne particulates when there is an insufficient supply of new respirators resulting from the Coronavirus Disease 2019 (COVID-19) pandemic. Among other things, the reissued EUAs for certain decontamination systems are now only authorized to decontaminate each compatible N95 respirator a maximum of four or fewer times.

Based on the FDA's review of real-world use of these systems and evidence from adverse events and scientific literature, including studies regarding N95 respirator failures from simulated and real-world use, the FDA has determined that it is appropriate to protect the public health or safety to revise certain decontamination system EUAs to limit the number of decontamination cycles and respirator reuses permitted under each authorization.

On January 22nd, the FDA also added two new devices to the device discontinuance list on our web page that lists medical device shortages during the COVID-19 public health emergency. There are no updates to the device shortage list at this time. The FDA will continue to update the device shortage and device discontinuance lists as the COVID-19 public health emergency evolves. Specifically, the FDA added the following devices to the device discontinuance list:

- 3M Company's 3M Triple Layer Molded Face Mask (2042F) and 3M Triple Layer Molded Face Mask, Petite (2042FP)
- BioFire Diagnostics, LLC's FilmArray Instrument (FLM1-ASY-0001)

As of January 22nd, the most recent COVID-19 update from the FDA, 319 tests and sample collection devices are authorized by the FDA under emergency use authorizations (EUAs). These include 237 molecular tests and sample collection devices, 69 antibody tests, and 13 antigen tests. There are 33 molecular authorizations that can be used with home-collected samples. There is one molecular prescription at-home test, one antigen prescription at-home test, and one over-the-counter (OTC) at-home antigen test.

End Date/Program
March 27, 2025
Special inspector General for Pandemic Recovery

Sept. 30, 2025
Pandemic Response Accountability Committee, Congressional Oversight Commission

AGENCY RESOURCES

USA.gov is cataloging all U.S. government activities related to coronavirus. From actions on health and safety to travel, immigration, and transportation to education, find pertinent actions here. Each Federal Agency has also established a dedicated coronavirus website, where you can find important information and guidance. They include: Health and Human Services (HHS), Centers of Medicare and Medicaid (CMS), Food and Drug Administration (FDA), Department of Education (DoED), Department of Agriculture (USDA), Small Business Administration (SBA), Department of Labor (DOL), Department of Homeland Security (DHS), Department of State (DOS), Department of Veterans Affairs (VA), Environmental Protection Agency (EPA), Department of the Interior (DOI), Department of Energy (DOE), Department of Commerce (DOC), Department of Justice (DOJ), Department of Housing and Urban Development (HUD), Department of the Treasury (USDT), Office of the Director of National Intelligence (ODNI), and U.S. Election Assistance Commission (EAC).

Helpful Agency Contact Information:
U.S. Department of Health and Human Services – Darcie Johnston (Office – 202-853-0582 / Cell – 202-690-1058 / Email – darcie.johnston@hhs.gov)

U.S. Department of Homeland Security – Cherie Short (Office – 202-441-3103 / Cell – 202-893-2941 / Email – Cherie.short@hq.dhs.gov)

U.S. Department of State – Bill Killion (Office – 202-647-7595 / Cell – 202-294-2605 / Email – killionw@state.gov)

U.S. Department of Transportation – Sean Poole (Office – 202-597-5109 / Cell – 202-366-3132 / Email – sean.poole@dot.gov)

ATTACHMENT 2C

KADESH & ASSOCIATES

South Coast AQMD Report for the February 2021
Legislative Meeting covering January 2021
Kadesh & Associates

January:

This has been a very busy year in Washington already: in the first three weeks alone we saw the new House session begin, the balance of power shift after the Georgia elections yielded a 50-50 Senate tie (which can be broken by Vice President Harris), the Capitol attacked during the formal counting of electoral college votes, then-President Trump impeached for a second time, and the inauguration of President Biden and Vice President Harris.

The House has voted to approve a change to its rules that will allow the majority to carve out any bills responding to COVID or to climate—including bills responding to the economic impacts of those crises—from budgetary pay-as-you-go requirements. We expect this will help with floor consideration of many clean air initiatives that are important to South Coast AQMD. In addition, the House leadership has already revised its initial vote calendar with the goal of finalizing a COVID response bill by mid-March when December's unemployment policy changes expire. The House and Senate leadership are considering a fast-track "budget reconciliation" approach to this COVID response bill, which would only require a simple majority in the Senate, at least as a procedural option while bipartisan talks on the President's proposal get underway.

The majority and minority leaders in the Senate have reached an agreement on an organizing framework, so we expect committees on that side of Capitol Hill to begin their work soon. Once COVID response legislation has been finalized, the plan is for Congress to turn to the President's "build back better" plan, where we expect clean energy, environmental justice, and sustainable infrastructure to be priorities.

Kadesh & Associates Activity Summary-
-Planning for the priorities for the 117th Congress and the Biden administration;
-Look Ahead discussion with South Coast AQMD staff;
-Continue initial outreach to congressional delegation; and
-Review of prior sessions' legislation with South Coast AQMD staff to identify priorities and any changes needed for the 117th Congress, including on Electric Vehicle infrastructure

Contacts:
Contacts included staff and House Members throughout the CA delegation, especially the authors of key legislation, new members of the South Coast House delegation, and our new Senator, Alex Padilla. We have also started to reach out to incoming Biden-Harris team members.

###

ATTACHMENT 3A

RESOLUTE

South Coast Air Quality Management District

Legislative and Regulatory Update – January 28, 2021

❖ Important Dates

Feb. 19	–	Last day for bills to be introduced.
Mar. 25	–	Spring Recess begins upon adjournment of the Legislature.
Apr. 5	–	Legislature reconvenes from Spring Recess.
Apr. 30	–	Last day for policy committees to meet and report to fiscal bills introduced in their house to the Appropriations Committee.
May 7	–	Last day for policy committees to meet and report to non-fiscal bills introduced in their house to the floor.
May 14	–	Last day for policy committees to meet until June 7.
May 21	–	Last day for Appropriations Committees to meet and report to non-fiscal bills introduced in their house to the floor.

❖ RESOLUTE Actions on Behalf of South Coast AQMD. RESOLUTE partners David Quintana and Jarrell Cook continued their representation of SCAQMD before the State's Legislative and the Executive branch. Selected highlights of our recent advocacy include:

- Working with South Coast team to set up call with Asm. Water, Parks and Wildlife Chairman Eduardo Garcia (D-Coachella) to discuss AB 617 funding allocations.
- Working with South Coast team to set up call with Asm. Cristina Garcia (D-Bell Gardens) to discuss AB 617 funding allocations.
- Working with State Controller's Office to discuss South Coast's designation as an independent special district vs. a dependent special district.

❖ Governor Newsom Releases his Proposed 2021-22 Budget, Including an 'Immediate Action Package.' Governor Newsom has announced a $227 billion budget for 2021-22, the highest in the state's history. The budget package includes a proposal for $5 billion of immediate spending to reopen schools, fund a stimulus check to California residents making less than $30,000 a year, and funding relief for small businesses and industries heavily impacted by the pandemic.

Immediate Action Package
Safely Reopen Schools and Accelerate Economic Recovery
(Dollars in Millions)

Proposal	Description	Funding
Reopen Schools		**$2,000**
Safe Reopening of K-12 Schools	Provide Proposition 98 General Fund for health and safety supplies and services to support in-person instruction for grades K-6.	2,000
Direct Support for Workers and Small Business		**$3,046**
Low-Income Tax Refund	Provide tax refund payments of $600 to nearly 4 million low-income Californians.	2,400
Small Business Aid	Provide additional funds for small business grants, including small non-profit cultural institutions.	575
Fee Waivers for Heavily Impacted Service Industries	Provide license and fee waivers for businesses and individuals heavily impacted by COVID-19, including those licensed by the Board of Barbering and Cosmetology and Department of Alcoholic Beverage Control.	71
Total Immediate Action Package		**$5,046**

The Governor's proposal would potentially impact the Legislature's timetable for passing the budget. In an ordinary session, the budget committee reviews the budget bills through May. In May, the Governor issues a revised budget based on updated revenues the state has received since the January proposal. Lawmakers then work to pass the budget by June 15.

Under this scheme, lawmakers are considering taking quick and immediate budget action by the beginning of March and then tabling action on the budget until after the May revise, into the summer.

- **Regional Stay-At-Home Order Lifted.** Governor Newsom and California's public health officials have lifted the Regional Stay-At-Home Order that was implemented on December 3, 2020. The state will now revert to the multi-tiered color-based system established in July.

  54 counties are now assigned to the most restrictive 'purple' tier, indicating a widespread risk of infection from COVID-19. Businesses in purple counties are mostly restricted to operating outdoors or indoors with modifications. Three counties—Alpine, Mariposa, and Trinity—are in the 'red' or 'substantial' tier. Sierra County is the only California county in the 'orange' or 'moderate' tier.

- **Governor Newsom and the Legislature Announce an Agreement to Extend State Eviction Moratorium to June 2021.** Legislators, the Governor, and stakeholders released a joint statement on January 25th announcing that they had reached a deal that would extend California's eviction moratorium to June 30th.

  The proposal, **SB 91**, would allow for up to $2.6 billion to be spent to pay up to 80% of Californian's unpaid rental debt if landlords agree to forgive the remaining 20%. The measure also extends a law scheduled that bans landlords from evicting people that have paid at least 25% of their rent until June 30th.

- **Efforts to Recall Governor Newsom Intensify.** Activists pursuing a campaign to recall Governor Newsom announced in mid-January that they have raised more than $2.4 million and have gathered 1.2 million signatures. The state has verified 410,000 of those signatures, rejecting approximately 15% of the names submitted by the campaign.

  The recall effort requires 1.5 million verified signatures by March 17; political experts suggest that the campaign will need to gather approximately 2 million signatures and significantly more money to succeed in qualifying a measure for the ballot in July or August.

- **Senator Wiener Introduces Carbon Emissions Disclosure Bill.** Senator Scott Wiener (D-San Francisco) has introduced **SB 260**, the 'Climate Corporate Accountability Act,' which would require the Air Resources Board to develop and adopt regulations that would require any corporation doing business in California with $1 billion or more in revenue to annually disclose their greenhouse gas emissions. CARB would also be required to develop and adopt regulations that would require those corporations to set science-based emissions targets by January 1, 2024.

  SB 260 is co-sponsored by Carbon Accountable, Sunrise Bay Area, and the California League of Conservation Voters. Its principal co-authors are Assembly Members Cristina Garcia (D-Bell Gardens) and Ash Kalra (D-San Jose).

- **Legislature Permitting Double-Referrals for Bills.** Both the Assembly and the Senate have indicated that bills will again be referred to multiple committees for hearings in the 2021 session. In the 2020 session, bills were limited to a single policy committee hearing in each house due to the truncated schedule lawmakers adopted after taking an extended Spring Recess in response to the growing concerns over the spread of COVID-19. This return to ordinary process will likely provide stakeholders more opportunity to move lawmakers with different perspectives to weigh in on legislation.

❖ **Assembly Releases 'Floor Process Memo.'** On January 25, the Assembly released a memo detailing its policies for Floor activities throughout the year. The full memo follows this report. Some highlights include:

- No guests or non-essential staff will be permitted on the Floor. Limited seating is available for media and the public.

- Legislative staff of both houses will be admitted to the rear of the Chamber upon presentation of a valid staff pass if space is available . . . Staff should leave the Chamber once their business has concluded. Other means of communicating with Members include the Chamber phone booths (916) 319-907 and the window near the Member's elevator where materials and/or notes can be sent to the Member or where staff can meet the Member. Staff entry into the rear of the Chamber should be reserved for matters of urgency.

- Floor amendments must be across the Desk by 5:00 p.m. or before Floor Session has adjourned, whichever is later to be eligible for action the next day.

FLOOR PROCESS MEMO

(rev. January 2021)

MEMORANDUM

Date: January 25, 2021 *Please retain this memorandum for future reference*

To: All Assembly Offices

From: Assembly Speaker Anthony Rendon
Assembly Speaker pro Tempore Kevin Mullin
Majority Leader Eloise Gómez Reyes
Republican Leader Marie Waldron
Republican Floor Manager Heath Flora

Subject: FLOOR PROCESS INFORMATION – Member Attendance for Floor Session and Committees, Floor Actions, Access to the Chamber, Phones & Electronic Communications, Floor Ceremonies, Requests to Adjourn-in-Memory, Floor Amendments, Committee Staff Session Responsibilities, Bills on Third Reading, Special Procedures for Deadlines and Letters to the Journal

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The following memo outlines Assembly policies for a variety of Floor activities throughout the year and special procedures during the weeks preceding a major deadline and other periods as designated by the Speaker (e.g., June 1-4 and August 30-Sept. 10, 2021).

MEMBER ATTENDANCE – FLOOR/CHECK-IN SESSION

Members must notify the Speaker's Office of the following:

- Requests to be excused from session. A written request is required in advance of session and it must include the reason and/or category of the session excuse (i.e., illness, legislative business, personal business waiving per diem).

- Notice of late arrival or early departure to or from session. The Speaker's Office will confer with the Majority Leader regarding the request.

This information should be given with as much advance notice as possible.
Letters can be hand-delivered to the Speaker's Office, State Capitol, Room 219, Attention: Jenny Murphey and labeled "Session Excuse Request." Alternatively, a signed, scanned request on the Member's letterhead may be emailed to Jenny Murphey. Republican Members should also notify the Republican Leader's Office in addition to the Speaker's Office.

Please note that requests to be absent for legislative business for the weeks preceding major deadlines or during other designated periods, as determined by the Speaker, will not be granted (e.g., June 1-4 and August 30-Sept. 10, 2021).

If the Member needs to leave Floor session temporarily and plans to return before Floor session adjourns, the Member may ask the Majority Leader for a pass. Passes for this purpose will be given at the discretion of the Majority Leader. For example, if the Member has a meeting in their office, needs to go to the Senate, or is participating in an event elsewhere in the Capitol building.

If during session a Member must leave and not return, they must receive approval from the Majority Leader. If approved, the Member has the option of submitting a "Leave of Absence—Balance of Day" letter to the Journal. The Member is on the roll for part of session and the letter explains their absence on any Floor votes taken the rest of that day.

Additionally, Members should note that their presence at a particular Floor session can only be recorded by the Desk after the opening gavel has sounded. Members who report to the Floor, but leave before the gavel has sounded, cannot be recorded as being present for session until they actually return, provided session has not adjourned.

Finally, Members should also note that the Desk will only process vote changes and/or add-ons up to the time of adjournment of the particular session.

FLOOR ACTIONS

Majority Leader
It is the role of the Majority Leader to make appropriate motions, points of order, or other arrangements necessary to expedite the proceedings of the Assembly. The Majority Leader is responsible for the presentation of all matters that relate to the order of business, and the promotion of harmony among the Membership.

The following staff facilitates requests for Floor action:

Speaker's Office:
Brian Ebbert, Floor Director
Myra Turner, Deputy Floor Director; Brandon Seto, Senior Floor Consultant
Tabatha Vogelsang, Special Assistant to the Speaker (916) 319-2063

Majority Leader's Office: Mark Farouk, Chief of Staff
& Melissa Cosio, Legislative Director (916) 319-2047

Republican Caucus: Suzanne Sutton, Director; Jenna Guillen, Floor Manager
& Gregory Melkonian, Consultant (916) 319-3900

Chief Clerk's Office/Assembly Desk: Hugh Slayden, Asst. Chief Clerk (916) 319-2856/2358

Please contact them to request these Floor actions:
- File notice waivers
- Permission to take up items without reference to File (WORF)
- Permission to take up items out of File order
- Permission to print letters in the Journal
- Permission to speak on an adjournment-in-memory (AIM) of an individual
- Make an announcement
- Re-referral of bills (also cc: Rules Committee staff on these re-referral requests)
- Permission to speak on condition of the File
- Other procedural motions and rule waivers as they arise

Requests to place items on the Members' desks should be directed to the Speaker's Office. The Speaker's Office will notify the Majority Leader of the request so that she may review and consider for approval.

The Majority Leader will make all approved motions on the Floor during session on behalf of the requestor. Announcements will be made by the Presiding Officer on behalf of the requesting Assembly Member.

If Leadership on both sides of the aisle has not been contacted before session, the request for Floor action may be denied or delayed.

ACCESS TO THE CHAMBER AND FLOOR - DURING SESSION

Policy During the COVID-19 Pandemic
Due to requirements for physical distancing and the need to protect the health and safety of Members, staff, press, and the public, no guests or non-essential staff will be permitted on the Floor. Limited seating is available for media and the public. As circumstances evolve, the policies mentioned below may be reinstated.

Guests
Guests of Assembly Members may be seated in the rear of the Chamber or in the gallery/balcony if space is available. Guests should keep their pass with them at all times and present their pass to the Sergeant-at-Arms when entering the gallery/balcony or the rear of the Chamber. Large numbers of guests in the gallery/balcony must also go through the approval process. Submit requests for passes to the Speaker's Office. If the request is approved, the passes will be available for pick-up from the Speaker's Office, Room 219. Pass pick-up is generally after 4:00 p.m. the day before the visit (Wednesday or Friday). If we are meeting every day, pass pick-up begins the morning of session. If the guests are international visitors, please inform the Speaker's Office of International Relations and Protocol: (916) 319-3666. Approval is discretionary and access may not be granted during deadline weeks and other periods designated by the Speaker.

Guests at the Members' Desks
Immediate family of the Assembly Member is permitted on the Floor and may join the Assembly Member at their desk. Immediate family includes spouses/partners, children, or parents. Submit the request to have family on the Floor to the Speaker's Office at least two business days in advance of session. The notice should include the family member's full name and pronunciation. The Speaker's Office will notify the Majority Leader of the request so that she may review and consider for approval. Approval is discretionary and access may not be granted during deadline weeks and other periods designated by the Speaker.

The family member must remain in the rear of the Chamber until a motion to allow access to the Floor is made by the Majority Leader on behalf of the Assembly Member. Once the motion has been made and the request granted, the Assembly Sergeant-at-Arms will provide a chair for the family member at the Assembly Member's desk.

If the family member requires supervision or assistance, the staff of the Assembly Member should remain in the rear of the Chamber for this purpose until the family member is escorted to the Floor.

Staff
Legislative staff of both houses will be admitted to the rear of the Chamber upon presentation of a valid staff pass if space is available. Passes will be provided in the Speaker's Office, Room 219, upon presentation of a valid California State Assembly or California State Senate identification card. Staff is not allowed on the Floor or at the rostrum at any time during session, regardless of the reason. Staff should leave the Chamber once their business has concluded.

- Other means of communicating with Members include the Chamber phone booths (916) 319-2907 and the window near the Member's elevator where materials and/or notes can be sent to

the Member or where staff can meet the Member. Staff entry into the rear of the Chamber should be reserved for matters of urgency.

Media
Media will be admitted to the Chamber if space is available upon presentation of a valid legislative media credential or an Assembly media credential issued for that day. Further information on media credentials can be obtained from the Speaker's Communications Office at (916) 319-2408, State Capitol, Room 448, Sacramento, California.

In the case of a special event, these pass provisions for guests, staff, and media may not be in effect and special passes may be required.

Photography/Recording Rules
Floor session observers must comply with the recording rules contained in SCR 38 (Resolution Chapter 163, Statutes of 2018) and policies adopted by the Assembly Rules Committee, including:

- Recording devices shall not extend beyond the Gallery railing;
- Recording equipment shall not obstruct points or paths of entry or exit;
- Recording equipment shall not interfere with recording equipment operated by the Assembly.

The recording rules for the Chamber and committee hearing rooms are publicly available on the Assembly's web site and in the Assembly Rules Committee office.

Conduct of Guests/Immediate Family of Members/Staff/Media in the Chamber
Recipients of passes/guest cards should review the text on the reverse of the pass/guest card which states:

> The holder of this guest card agrees to conduct themselves in a quiet and orderly fashion in order to maintain the decorum of session.
>
> No packages, suitcases, food, or beverages are allowed in the Chamber or in the Gallery.
>
> Use of cellular phones for phone calls is prohibited.
>
> Guests may not disrupt or interfere with the proceeding or the experience of others present.
>
> This guest card may be revoked by the Assembly Speaker, Assembly Majority Leader, Assembly Rules Committee, or the Assembly Sergeant-at-Arms.

Attire
Pursuant to Assembly Rule 118.1, all persons admitted to the Floor of the Assembly during session must be dressed in appropriate attire. This includes guests, immediate family of Assembly Members, staff, and members of the media.

ACCESS TO THE CHAMBER AND FLOOR – BEFORE /AFTER SESSION AND NON-SESSION DAYS

For access to the Assembly Chamber before or after session or non-session days, contact the Speaker's Office at (916) 319-2063.

Also refer to the memo from the Speaker's Office for this policy. (See Addendum 1).

TELEPHONES AND ELECTRONIC COMMUNICATIONS

Pursuant to Assembly Rule 117.5., while on the Floor of the Assembly during any session of the Assembly, a Member may not do either of the following:

(a) Use a cellular telephone to make or receive calls.

(b) Send electronic communications to, or receive electronic communications from, any lobbyist.

Members may use mobile phones for phone calls on the portico or outside of the Chamber.

FLOOR CEREMONIES

Policy During the COVID-19 Pandemic
To ensure physical distancing, and health and safety, only Members and essential staff will be allowed on the Floor during Floor sessions. Because of this, no ceremonies will be conducted on the Floor for the time being. As circumstances evolve, the policies mentioned below may be reinstated.

Floor ceremonies are events for a legislative or non-legislative purpose that impact the Floor session. These include:

- Guests on the Floor for a presentation, an introduction, performance, etc.

Requests for Floor ceremonies should be submitted to the Speaker's Office in advance of any event. For large or involved ceremonies, requests must be submitted 21 days or more in advance. For all other Floor presentations involving guests or special presentations on the Floor, requests must be submitted at least two business days prior to the Floor session. The e-mail or letter should include a thorough description of the nature and purpose of the presentation/ceremony, the number of guests, time commitment, and the full name and direct phone extension of the staff contact in the requesting Assembly Member's Office. Once the information is received, the Speaker's Office will notify the Majority Leader of the request so that she may review and consider for approval.

Invitations/announcements/press releases about ceremonial events shall not be released until the date and scope of the ceremony are approved by both the Speaker and the Majority Leader.

Requests for remarks by non-Members are at the Speaker's and Majority Leader's discretion.

Approved Floor ceremonies, presentations, and introductions generally will be made from the Member's desk and will take place at the beginning of session. A statement for the

introduction/Floor ceremony should be e-mailed to the Floor contacts for the Speaker's Office by Noon two business days before the introduction/Floor ceremony. The Speaker's Office will provide this information to the Majority Leader so that she may review. The statement may be edited for content and length.

Samples or first drafts of any materials that will be distributed to the Members on the Floor in conjunction with the ceremony should be forwarded to the Speaker's Office in advance. The Speaker's Office will notify the Majority Leader of the request so that she may review and consider for approval.

The number of guests introductions/welcomes/Floor ceremonies scheduled for each session day may be limited. Routine presentations should not exceed 5 minutes. No introductions, Floor presentations, or Floor ceremonies will take place during deadline weeks and other periods designated by the Speaker.

For further information about the accommodation of guests and/or ceremonies during session, please contact Myra Turner, Brian Ebbert, Brandon Seto, or Tabatha Vogelsang of the Speaker's Office (916) 319-2063, and Mark Farouk and Melissa Cosio of the Majority Leader's Office. Copy all six Floor staff for requests sent via e-mail.

REQUESTS TO ADJOURN-IN-MEMORY

The Assembly Rules require motions to adjourn-in-memory (AIM) be submitted to the Desk in writing.

This means a Member rising to speak on a request to adjourn-in-memory *during session* is an exception to the Rules. A rule waiver approved by the Majority Leader is required *prior* to making the request to speak on an AIM.

When making a request to speak on the Floor for an AIM, Members should consider reserving this privilege for exceptional circumstances. Approved requests to speak on an AIM should be under 2 minutes. Members should refrain from speaking on the broader policy issues that may relate to the individual(s).

Send e-mail requests to speak on an adjournment-in-memory to Mark Farouk and Melissa Cosio, and copy Brian Ebbert, Myra Turner, Brandon Seto, Tabatha Vogelsang, Suzanne Sutton, Jenna Guillen, Gregory Melkonian, Amy Leach, and Tammy Weis.

Adjournment-in-memory requests must be accompanied by a biography of the deceased, or a link to the obituary, and the city in which they resided. This information is in addition to the yellow form you will submit to the Desk. Please submit the yellow card to the Desk prior to Floor session.

Yellow adjourn-in-memory cards are available from Amy Leach or Tammy Weis at the Assembly Desk. Prior to the adjournment of session, the Presiding Officer will recognize Members whose requests to speak on an AIM have been approved by the Speaker and Majority Leader, and instruct the Clerk to read the written adjourn-in-memory cards that have been submitted. The request to adjourn-in-memory is then printed in the Assembly Journal. **A rule**

waiver is not required to submit a completed adjourn-in-memory card to the Desk for printing only, if the Member does not want to speak.

Another way for Assembly Members to extend their condolences is to order a memorial resolution or provide mourners with a copy of the Assembly Journal that shows the adjournment-in-memory of the deceased person.

SUBMITTING FLOOR AMENDMENTS

To be eligible for action the next day, amendments must be across the Desk by 5:00 p.m. or before Floor Session has adjourned, whichever is later.

COMMITTEE STAFF SESSION RESPONSIBILITIES

At least one committee consultant from each standing committee must be available 30 minutes before and until 30 minutes after session in case an analysis of a bill or an amendment is needed.

The designated consultant available before and after session must be:

- Available to come to the Floor during session if deemed necessary; and
- Able to successfully use a computer to send the bill/amendment analysis to the Floor Analysis Unit in the Chief Clerk's Office.

To be eligible for action the next day, amendments must be across the Desk by 5:00 p.m. or before Floor Session has adjourned, whichever is later. Proposed amendment analyses must be successfully delivered to the Floor Analysis Unit within one hour of receipt.

Before the conclusion of each work day, committee staff should check with the Floor Analysis Unit to determine if there are amendments for the committee to analyze.

To ensure that policy and fiscal committee staff can be reached if there is an urgent need for an analysis, please verify the committee's contact numbers on file at the Floor Analysis Unit of the Chief Clerk's Office [(916) 319-2557, State Capitol, Room 3196,
Fax (916) 319-2855]. The Floor Analysis contact is Russell Tomas.

FOOD AND DRINK

Consumption of food in the area of the Members' desks is prohibited. Drinks are discouraged, but covered/sealed beverages in non-branded cups are acceptable.

BILLS ON THIRD READING

Plans for Bills

For the orderly management of the House, each Member is strongly encouraged to inform the Speaker's Floor Unit as to whether or not they intend to take up any bill eligible for Floor action at least 24 hours in advance of Floor session. E-mail floor@asm.ca.gov (cc: Mark Farouk) and indicate whether the Member is planning to take up a bill for passage, pass and retain, or is waiting for amendments, etc. In urgent circumstances, contact the Floor Unit staff directly (see page 3 for contacts).

Analyses of Bills on the Floor

When measures pass the last committee, staff in the Speaker's Office, the Chief Clerk's Assembly Floor Analysis Unit (AFA), a policy committee, the Assembly Republican Caucus' Office of Policy and Budget, and their counterparts in the Senate may contact you or your office for the information listed below. Policy committee staff may contact Members' office staff assigned to bills earlier than the last committee action, including while bills are on the Appropriations Suspense File, in order to meet the Floor deadline for publication.

Staff may be asked to provide the same or similar information several times; it is important to respond to those inquiries and to do so promptly.

The information these offices need includes:

Bill Background or Fact Sheet	Bill number. Author/Floor Manager, one-sentence description about the subject of the bill followed by background and the staff contact.
Support/Opposition Summary	A list of individuals/organizations for/or against the bill as of the current date.
Support/Opposition Letters	Copies/scans of the individual letters. If recent amendments have been taken that remove opposition to a bill, add the new letter or e-mail from the organization indicating the change in position. Send to the first policy committee of reference, who maintains the support and opposition lists. Contact the committees to see if they have letters which may have been sent to the committee instead of directly to the bill author. Give packets/electronic copies to committees and Offices listed below.
Author's Statement	The policy committees preparing Floor analyses will include an author's statement in their analyses. Make sure it is up-to-date based on the current version of the bill.

To ensure that you are sending the information in a timely fashion, regularly review the Daily File to determine when your bill will be eligible on the Assembly Floor.

Offices That Prepare Floor Analyses

Chief Clerk (AFA)	Floor Analysis is usually written by the first committee of reference. This is the non-partisan and official analysis of the bill.

		Support and opposition letters should be submitted to the policy committee web site before the non-fiscal and fiscal deadlines in order to meet the Floor deadline for publication. Do not send updates to the Chief Clerk.
Policy Committees	(Assembly)	Although e-mail, FAX, or hard copy delivery are still available, the submission of letters of support and opposition via policy committee websites should be the primary channel. Additionally, advocates should be encouraged to follow this process. Copies of fact sheets, author's statements, and any other relevant information may be e-mailed, faxed, or hand-delivered to the first committee of reference. A consultant will also contact the staff assigned to the bill and verify support and opposition in advance of the last committee action. Any change in support and opposition should be reported to the committee to be reflected in the Floor analysis. Written verification is required from individuals/organizations who have withdrawn opposition.
Republican Caucus	(Assembly)	E-mail, FAX, or hand-deliver copies of documents to the Caucus. Scan and email of hard copies is preferred. Any change in support and opposition should be reported to the Caucus to be reflected in its Floor Analysis. Written verification is required from individuals/organizations who have withdrawn opposition.
Secretary of the Senate Floor Analyses	(SSFA)	Floor Analysis is written by the first committee of reference. This is the non-partisan and official analysis of the bill. Positions are taken from the last record of support and opposition on file with the committee. Although e-mail, FAX or hard copy delivery are still available, the digital submission of letters of support and opposition is available through most Senate policy committee websites. Please check the Senate policy committee web site to make sure the digital option is available. Do not send updates to the Secretary of the Senate.
Republican Caucus	(Senate)	Scan and email of hard copies to the consultant analyzing the bill is preferred. Any change in

support and opposition should be reported to the Caucus to be reflected in its Floor analysis.

When to send the information

Assembly: Non-fiscal bills after policy committee hearing. For Fiscal bills after passing Appropriations and the bill moves to Second Reading. Also when bill comes back from the Senate for Concurrence.

Senate: Non-fiscal bills after policy committee hearing. For Fiscal bills after passing Appropriations and bill moves to Second Reading.

Relevant contact information

Assembly Republican Caucus Office of Policy and Budget
Phone (916) 319-3900
Republican Caucus FAX (916) 319-3902
Legislative Office Building, 1020 N Street, Room 400, Sacramento, 95814

Assembly Floor Analysis (AFA)
Phone: (916) 319-2557
State Capitol, Room 3196

Secretary of the Senate Floor Analyses (SSFA)
Phone (916) 651-1520

Senate Republican Caucus Office of Policy
Phone (916) 651-1501
FAX (916) 414-3681
Legislative Office Building, 1020 N Street, Room 234, Sacramento, CA 95814

During the weeks preceding a deadline, bills on Third Reading in the Assembly that are passed on file two consecutive times may be sent to the Inactive File.

The rules and procedures of the Senate and Assembly are different. Please watch for updates from the Chief Clerk and the Secretary of the Senate regarding deadline requirements and processes for each House.

FLOOR MANAGERS OF LEGISLATION IN THE OTHER HOUSE

Assembly Bills on the Senate Floor and Senate Bills on the Assembly Floor need a Member of that House to take up the legislation on the Floor.

When requesting a rule waiver or giving information about the plans for a bill, copy the staff person in the author's office on the e-mail to avoid duplicates.

Once a Floor manager has been designated, notify the appropriate Desk so that the Floor Manager's name will be listed in the Daily File.

SENATE BILLS: Contact Creston Whiting-Casey (Assembly File Clerk), Tabatha Vogelsang and Brandon Seto of the Speaker's Office via e-mail at Creston.Whiting-Casey@asm.ca.gov, Tabatha.Vogelsang@asm.ca.gov, and Brandon.Seto@asm.ca.gov. Include the staff contact in the Assembly Floor Manager's office in the e-mail. The Assembly Desk phone number is (916) 319-2358.

ASSEMBLY BILLS: Contact Holly Hummelt, Claudia Fuentes, Heshani Wijemanne, Francisca Zabala, and Bernadette "Bernie" McNulty at the Senate Desk via e-mail at Holly.Hummelt@sen.ca.gov, Claudia.Fuentes@sen.ca.gov, Heshani.Wijemanne@sen.ca.gov, Francisca.Zabala@sen.ca.gov, and Bernadette.McNulty@sen.ca.gov. Again, include the staff contact in the Senate Floor Manager's office on the e-mail. The Senate Desk phone number is (916) 651-4181.

RESOLUTIONS

In the Assembly, resolutions must be introduced or received by the Assembly at least 10 working days prior to being eligible for hearing. The 10-working day policy for Rules action also applies to resolutions received from the Senate.

This will allow time for the Rules Committee to hear the resolution or refer it to a policy committee, and if the resolution passes, report the measure to the Floor to the Consent Calendar or Third Reading File, so the resolution will be eligible for Floor action without rule waivers.

If the author intends to request permission to introduce guests in conjunction with the resolution, contact the Floor contacts listed in the Floor Ceremonies Section of this memorandum.

Ideally, commemorative resolutions should be **introduced 30-45 days** before the day/week/event to allow time for the measure to move through both Houses without rule waivers.

Refer to the memo from the Assembly Rules Committee for the policy on resolutions. (See Addendum 2).

LETTERS TO THE ASSEMBLY JOURNAL

Instances may arise when a Member needs to submit a letter to the Journal for clarification on one of their bills. Here are the instructions for preparing a letter to the Journal:

1. The letter should be in its final form and on the Member's letterhead
2. The letter must be addressed to Sue Parker, Chief Clerk, California State Assembly
3. The letter must have an original wet signature by the requesting Member
4. Scan the signed letter and send the pdf in an email to the Speaker's Floor Unit (Brian Ebbert, Brandon Seto, Myra Turner, and Tabatha Vogelsang). In the body

of the email, include the name and direct line of the staff contact for the letter
5. Bring the signed original to Room 449, or to Brian Ebbert, Brandon Seto, Myra Turner, or Tabatha Vogelsang on the Assembly Floor if we are in session

The Speaker's and the Republican Leader's consultants will review the letter. They may ask for revisions, and if this occurs, repeat the steps above with the revised letter.

If the letter is approved, the Majority Leader will make a motion to have the letter printed in the Journal. During deadline periods, this motion will likely happen later on the final night of Floor session. At other times, the motion to print the letter will generally be done within one or two Floor session days.

Addendum 1. Assembly Policy on Group Visits to the Chamber

Date: January 25, 2021

To: Assembly Members and Staff

From: Speaker's Floor Unit

Subject: Group Visits to the Assembly Chamber

Policy During the COVID-19 Pandemic
Due to requirements for physical distancing and the need to protect the health and safety of Members and staff, no guests or non-essential staff will be permitted on the Floor. As circumstances evolve, the policies mentioned below may be reinstated.

The following policy has been established for groups entering the Assembly Chamber during non-session hours.

The Chief Clerk and staff use the Chamber as a working office. Any group wishing to access the Chamber must obtain permission from the Speaker's Office and comply with the following:

- Contact the Speaker's Office to confirm availability of the Chamber and request approval for the visit at (916) 319-2063.
- Upon approval from the Speaker's Office, all groups must enter and exit through the rear of the Chamber located across from the Speaker's Office, Room 219.
- Large groups (40 or more) will be split up and take turns visiting the Chamber.
- Visitors must be quiet, respectful, and courteous at all times.
- Requests to record, film, or photograph in the Chamber when the Assembly is not in Floor session should be directed to the Speaker's Office.
- Caucus photographers may only be utilized when the Member is present. When caucus photographers are utilized, Member offices need to schedule the photographer and then notify the Speaker's Floor Unit.
- Guests must not touch the laptop computers; the Members' voting mechanisms, the wiring under the desks and throughout the Chamber, or the microphones.

(next page)

- When possible, groups should remain at the back of the Chamber and must refrain from sitting at the Members' desks, walking up to the rostrum, or moving papers, furniture, and equipment in the Chamber.
- Staff from the sponsoring Member's office must be with the group until their departure from the Chamber.
- Lobbyists present with a group should refrain from posing in photographs on the Floor.
- Former Members of the Legislature should have a current Member make the Floor access request on their behalf, or directly seek permission from the Speaker's Office.
- No food or drink is allowed in the Chamber.

The Assembly Gallery is generally open from 9:00 a.m. to 5:00 p.m., Monday through Friday. Groups may continue to view the Chamber from the Gallery without a legislative escort during these hours. If access to the Gallery is closed, legislative staff with valid identification may escort groups to the Gallery after contacting the Chief Sergeant-at-Arms' Office at (916) 319-2808 to arrange for the doors to be unlocked.

If you have any questions, you may contact the Speaker's Office at (916) 319-2063. Thank you for your cooperation.

Addendum 2. Assembly Rules Procedures for Hearing Resolutions

Assembly Committee on Rules

COMMITTEE CHAIR
KEN COOLEY

ROOM 3016, STATE CAPITOL
SACRAMENTO, CA 95814
(916) 319-2800

CHIEF ADMINISTRATIVE OFFICER
DEBRA GRAVERT

TO: All Assemblymembers and Employees

FROM: Assembly Rules Committee

RE: Rules Committee Procedures for Hearing Resolutions

DATE: January 19, 2021

In addition to the information provided below, please be aware that the COVID-19 pandemic has temporarily altered policies related to events and guests in the Chamber. As circumstances develop, these policies may change.

The Assembly Rules Committee is required to provide analyses of resolutions to the public at least one working day prior to the hearing. Analyses must also be prepared prior to Floor action, unless the resolution is recommended for the Consent Calendar. The following is required for resolutions referred to the Assembly Rules Committee for hearing:

- Generally, resolutions must be introduced at least 10 working days prior to being eligible to be heard on the Assembly Floor. This will allow time for referral, analysis, and hearing in the Assembly Rules Committee. Please note that resolutions involving substantive policy issues may be referred to policy committees, which may require more time. *(Note: Please be aware that Rules Committee is not meeting as regularly as a result of the COVID-19 pandemic. Members and staff are advised to give extra time from introduction of a resolution to it being presented on the Floor.)*
- Members and staff must work with the Speaker's Office and Majority Leader's Office if they would like to have a Floor presentation coincide with the presentation of a resolution on the Floor. *(Note: Such events will not be held during the pandemic.)*
- Assembly Rules Committee staff will contact authors to provide a background sheet which must be completed before the resolution is set for hearing. Please note the 10-day requirement above.
- Similar resolutions will generally be considered on a first introduced basis. Authors will be asked to work together when they have resolutions on a similar topic.
- After being heard in the Assembly Rules Committee, all noncontroversial resolutions will be reported out to the Assembly Floor on the Consent Calendar. If a Member anticipates guests attending in conjunction with a resolution, please contact the Speaker's Office and Majority Leader's Office. *(Note: Due to the pandemic, guest visits will not be permitted during Floor session.)*

- Pursuant to Assembly Rule 74, resolutions are not in order on Third Reading during the final week of session, so they may be sent to the Consent Calendar in order to expedite passage and allow the Assembly to focus on pending legislation.

The Assembly Rules Committee usually meets prior to session on Mondays and Thursdays. Please call (916) 319-2800 if you have any questions.

ATTACHMENT 3B

CALIFORNIA ADVISORS, LLC

South Coast AQMD Report
California Advisors, LLC
February 12, 2021 Legislative Committee Hearing

General Update

The Legislature's January schedule has been different than in years past. The delay in their return to Sacramento due to COVID-19, a federal holiday, and the capitol shutting down for a day due to security concerns created a bit of an uneven pace this month. Nevertheless, the Governor and the Legislature had several priority issues to work on when they were in session.

The most pressing budget-related issue that they needed to tackle was the residential eviction moratorium that was set to run out at the end of January. On Monday, January 25th the Governor and legislative leaders announced they came to a deal to extend the protections until June 30th, 2021. They amended the language into budget trailer bills and passed both bills just before the end of the month.

Another issue that has dominated the Legislature in January was the confirmation of Assemblymember Shirley Weber as the state's new Secretary of State. Weber replaced former Secretary of State Alex Padilla after he was officially sworn into the United State Senate. The two houses finished their confirmation process on January 28th and unanimously approved her appointment. Governor Newsom announced that Weber would be sworn in on January 29th. With her appointment there will now be an open seat in the Assembly. We expect the Governor to announce a special election to fill that seat in the coming weeks.

On January 21st, the Senate Republican caucus announced that Senator Scott Wilk (R-Santa Clarita) was unanimously selected as the next Senate Republican Leader. Senator Wilk is one of nine Republican members in the state Senate as their caucus lost two seats in the November. Wilk assumes the leadership post as he enters his last four-year in the Senate before term limits set in.

Lawmakers will now turn their attention to the next legislative deadline of February 19th which marks the last day to introduce new bills for this year. At the end of January, both houses had introduced over 600 bills combined. We expect that in February hundreds of bills will be introduced leading up to the deadline. Additionally, the respective budget committees will continue working through the "early action" budget items.

Lastly, on the COVID-19 front, officials with the Department of Public Health ended the Regional Stay at Home Order on January 25th, lifting the order for all regions statewide. This allows counties to return to the rules and framework the state had laid out that included color-tiers that indicates which activities and businesses can be open. As it relates to the vaccine

distribution, the Governor also has announced he will streamline the rollout and starting in February individuals 65+ will be eligible along with essential workers that were previously identified. He also revealed that age will be prioritized moving forward.

Appointments:

On January 27th, the Senate Rules Committee met to review Gideon Kracov's appointment to the California Air Resources Board. The Rules committee voted 5-0 to support his appointment and it will not go before the full Senate.

ATTACHMENT 3C

Joe A. Gonsalves & Son
Anthony D. Gonsalves
Jason A. Gonsalves
Paul A. Gonsalves
PROFESSIONAL LEGISLATIVE REPRESENTATION
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TO: South Coast Air Quality Management District

FROM: Anthony, Jason & Paul Gonsalves

SUBJECT: Legislative Update – January 2021

DATE: Thursday, January 28, 2021

The Legislature was initially scheduled to return for the 2021-22 legislative session on January 4, 2021, however, both houses postponed the January 4th return to January 11, 2021 as a result of the surging COVID-19 numbers.

Now that the Legislature has officially reconvened, the bulk of the work is being performed by staff working remotely, with limited numbers of staff allowed to enter the Capitol. In fact, the Legislature has recently provided a stipend to staff in order for them to buy computers, cameras etc. as we are hearing the COVID remote restrictions are likely to continue through the Legislature's July 16-August 16th summer recess. This is all subject to change depending upon COVID test numbers, vaccine distribution and the overall health of our State.

Taking proactive measures to protect public safety at the State Capitol and across California, Governor Gavin Newsom enacted a series of actions to bolster security in advance of the presidential inauguration, including a General Order authorizing the deployment of 1,000 California National Guard personnel to protect critical infrastructure, including the State Capitol.

Thankfully, the public safety measures worked in Sacramento and the Legislature has been able to continue with their work.

The following will provide you with updates of interest to the District:

BUDGET

On January 8, 2021, Governor Newsom unveiled his proposed $227 billion 2021-2022 budget. As the Governor noted himself, the last 12 months have been a financial roller coaster for the state. Coming into 2020, the Governor enjoyed a large budget surplus and healthy reserves. After the state's response to the pandemic intensified in March 2020, revenues were expected to plummet, and the Governor and Legislature believed that they were facing a massive $54 billion deficit. The 2020 budget reflected that expectation.

However, state revenues have been stronger than anticipated. The state has been extremely reliant on high income earners and capital gains revenue for years. While this has historically been a driver for the state's infamous boom and bust budgeting cycle, state revenue has remained steadier than expected through the pandemic since many high-income earners have continued to earn from home without interruption. As such, the state outperformed the expectations of the 2020 budget and is entering 2021 in far better shape than expected.

The Governor's Budget anticipates a $15.5 billion one-time surplus. The Governor proposes to use most of this revenue to support one-time expenses including repayment of debt, direct stimulus payments to low-income taxpayers, combatting homelessness, combatting COVID-19, and providing assistance to small businesses.

The 2020-2021 budget year left $11.4 billion in reserves. The Governor's Budget proposes to increase reserves to $18.9 billion. However, it is worth noting that most of the proposed increase in reserves is required by the Constitution. Discretionary increases in reserves only amount to $267 million in the Governor's budget.

The Governor's proposed budget requested that the Legislature take early action on $12.8 billion of accelerated funding. He has asked the Legislature to approve $5 billion in the coming weeks which includes $2 billion in grants to schools to incentivize in-person learning, $2.5 billion to provide $600 tax refunds to low-income Californians, and $550 million for small business loans and grants.

In addition, the Governor has asked the Legislature to approve $7.8 billion by early spring, most of which would go to education, combatting homelessness, and meeting the Governor's recently adopted goals to sell more zero emission vehicles.

The proposed Budget also includes a $1.37 billion Cap and Trade Expenditure Plan. These funds include the revenues that were not allocated in last year's Budget Agreement. Of the $1.37 billion, $325 million is being directed to the AB 617 program, of which, $50 million is dedicated to program implementation by

local air districts and $10 million is dedicated for technical assistance to Community Groups.

The Cap and Trade Expenditure Plan also includes $635 million to reduce emissions from the transportation sector. This includes $315 million for clean trucks, buses & off road freight equipment, $170 million for Agricultural Diesel Engine Replacement & Upgrades, and $150 million for the Clean Cars 4 All & Transportation Equity projects.

The remaining Cap and Trade funds are proposed to be spent on wildfire prevention and water projects.

In addition to the Cap and Trade Program, the Governor has proposed the renewal of AB 8, the alternative fuel and vehicle technology program (Carl Moyer) that is set to expire in 2024. As you know, the Carl Moyer program provides incentive funding for air districts to distribute locally.

The reason the Governor wants to renew the program now is because he has proposed securitizing $1 billion of future AB 8 revenues to expand the Clean Transportation Program for zero-emission vehicle infrastructure. Additionally, he wants to support incentive programs to accelerate the turnover of existing light-, medium-, and heavy-duty vehicles and equipment, including off-road construction and agricultural equipment and locomotives. The proposal would extend the AB 8 program to 2045, which coincides with the Governor's executive order for 100% zero emission vehicles by 2045.

Unfortunately, not all of the news relating to the Governor's Budget was good. The Department of Finance (DOF) projects that revenue growth will not keep pace with the growth in expenses in future years. This means that the state could be facing an operating deficit of $7.6 billion in the next budget year which would grow to $11.3 billion in the 2024-2025 budget year.

This is the start of the Budget negotiations between the Legislature and the Governor. The Legislature has between now and June 15, 2021, to put forward their budget proposals and send a budget package to the Governor. Our firm will continue to work collaboratively with SCAQMD staff, the Legislature and Governor to ensure that the District's needs are met.

SENATE REPUBLICAN LEADERSHIP CHANGE

On January 21, 2021, Senate Republican Leader Shannon Grove announced that Senator Scott Wilk from Santa Clarita was unanimously selected as Senate Republican Leader-elect. Leader Grove will continue to work with Senator Wilk and Senate pro Tem Toni Atkins during the transition.

Senate Republican Leader-elect Wilk was elected to a second term representing the 21st Senate District in Southern California in November 2020. The leadership change takes effect in a few weeks.

CARB APPOINTMENT

On January 13, 2021, CARB Executive Officer Richard Corey announced the appointment of Chanell Fletcher as the Deputy Executive Officer of Environmental Justice. Fletcher will oversee CARB's Environmental Justice and Community Air Protection Program and be responsible for developing CARB-wide environmental justice policies. She will play a key role in CARB's programs designed to address disproportionate impacts from air pollution and climate change and associated chronic health conditions affecting Black, Latino and other communities of color across the state.

For the past three years, Fletcher served as Executive Director of ClimatePlan, a nonprofit organization focused on advancing policies and programs to address the relationship between land use policy and climate change to realize more sustainable and equitable development throughout California. Prior to that, Fletcher was Senior Policy Manager for the Safe Routes to Schools National Partnership. She has worked with environmental justice organizations including the Leadership Counsel for Justice and Accountability, as well as racial equity organizations including PolicyLink and Public Advocates to shape legislation and advocate for competitive grant programs that increase access and opportunity for low-income communities and communities of color.

As part of CARB's senior executive team, Fletcher will serve as the primary internal and external contact for CARB on environmental justice, climate equity and community air protection efforts. As Deputy Executive Officer of Environmental Justice, she will work closely with several of CARB's internal programs and will contribute to CARB's ongoing racial equity efforts. Fletcher will also develop a training program to provide staff with the understanding and skills to more effectively partner with communities.

As the executive office lead on AB 617, Fletcher will also guide the implementation of the program by building on the successes and lessons learned since the program's inauguration three years ago. Given her experience and expertise, she brings an important voice to help inform strategies that better align California's air quality, climate, sustainable transportation and mobility, and housing goals.

Fletcher will represent CARB before the Board, the Legislature, in public meetings and workshops, and in in-person meetings. Fletcher will formally assume her new position on February 1, 2021.

2021 LEGISLATIVE CALENDAR

Jan. 1 - Statutes take effect.

Jan. 10 - Budget must be submitted by Governor.

Jan. 11 - Legislature reconvenes.

Jan. 22 - Last day to submit bill requests to the Office of Legislative Counsel.

Feb. 19 - Last day for bills to be introduced.

Apr. 30 - Last day for policy committees to hear and report to Fiscal Committees fiscal bills introduced in their house.

May 7 - Last day for policy committees to hear and report to the Floor non-fiscal bills introduced in their house.

May 14 - Last day for policy committees to meet prior to June 7.

May 21 - Last day for fiscal committees to hear and report to the Floor bills introduced in their house. Last day for fiscal committees to meet prior to June 7th.

June 1-4 - Floor Session Only. No committee, other than Conference or Rules, may meet for any purpose.

June 4 - Last day for bills to be passed out of the house of origin.

June 7 - Committee meetings may resume.

June 15 - Budget bill must be passed by midnight.

July 14 - Last day for policy committees to meet and report bills.

Aug. 27 - Last day for fiscal committees to meet and report bills to the Floor.

Aug. 30-Sept. 10 - Floor Session only. No committees, other than conference committees and Rules Committee, may meet for any purpose.

Sept. 3 - Last day to amend bills on the Floor.

Sept. 10 - Last day for each house to pass bills. Interim Study Recess begins at end of this day's session.

ATTACHMENT 4A

South Coast Air Quality Management District
Legislative Analysis Summary – H.R. 283
Version: As introduced, January 12, 2021
Analyst: LTO

H.R. 283 (Schweikert and Cardenas)
Crowdsourcing of Environmental Data Act of 2021

Summary: This bill would amend the Clean Air Act to allow States to submit air monitoring data from air quality sensors, including mobile sensors, outside of the State and Local Air Monitoring Stations (SLAMS), for one or more criteria air pollutant, with exception of carbon monoxide and nitrogen dioxide. The air monitoring data is subject to review and approval by the U.S. Environmental Protection Administrator based upon meeting federal Clean Air Act requirements.

Background: South Coast AQMD operates 39 permanent air monitoring stations (AMS) and four (4) single-pollutant air monitoring sites for lead within its jurisdiction. In late 1980, South Coast AQMD and the California Air Resources Board (CARB) conducted an extensive review of the State and Local Air Monitoring Stations (SLAMS) designations. South Coast AQMD and CARB continue to inspect and audit the ambient air monitoring network, including a June 2020 comprehensive Technical System Audit.

Further, South Coast AQMD is required to conduct an annual review of its air monitoring network which includes technical analysis and requires public outreach. The review process focuses on current and future air monitoring strategies and network changes are made in consultation with the U.S. Environmental Protection Agency (U.S. EPA) and CARB. Any modifications to the air monitoring sites are documents in the annual report submitted to the U.S. EPA.

South Coast AQMD also deploys air monitoring equipment as part of special studies, such as the Multiple Air Toxics Exposure study, special air toxics investigations, and compliance and enforcement. This additional air monitoring data is critical and is often used in complement with the fixed SLAMS sites.

Status: 1/12/2021, Introduced and referred to House Committee on Energy and Commerce.

Specific Provisions: H.R. 283 would allow States to submit air monitoring data separate from SLAMS for State Implementation Plan (SIP) purposes upon review and approval by the U.S. EPA. The alternative data must be collected through air monitoring equipment and methodologies that meet the Federal Reference Method (FRM) and Federal Equivalent Methods (FEM) standards. The bill is supposed to provide "greater regulatory flexibility" to States in making a determination, "on whether an exceedance of the national ambient air quality standard for the criteria air pollutant involved has occurred."

Impacts on South Coast AQMD's Mission, Operations or Initiatives: South Coast AQMD works in collaboration with the State and federal government on the SLAMS network. South Coast AQMD also utilizes a wide variety of sensors and novel approaches to collect air quality data. Further, South Coast AQMD's Air Quality Sensor Performance Evaluation Center (AQ-SPEC) is the pre-eminent organization for the evaluation of commercially available "low-cost"

air quality sensors in both field and laboratory settings. AQ-SPEC also publishes technical papers and information on sensor technology and data interpretation.

While H.R. 283 seeks to provide flexibility to States in employing air monitoring data for SIP nonattainment demonstrations and to increase the deployment of air sensors in communities, there are challenges with existing low-cost sensors meeting FRM and FEM standards. Currently, low-cost sensors are utilized to supplement existing information and to get a better understanding of the spatial and temporal variations of the pollutant of interest. Low-cost sensors and modeling techniques also can be used to calculate more granular and refined air quality index values.

Additionally, FRM/FEM instruments require a substantial amount of maintenance, quality assurance, and quality control to make sure the data is accurate as possible. Even if the current low-cost sensors were up to par to FRM/FEM standards, it would be extremely difficult to maintain a network with hundreds of sensors deployed for regulatory purposes. The bill does not provide funding for the deployment of additional air monitoring sensor technologies in communities nor address the need for increased funding for the maintenance and operation of the SLAMS network.

H.R. 283 could create unintentional conflicts and legal issues if air monitoring data is collected by an organization or individual versus the local air pollution control agency or state. Air monitoring data could be submitted to either refute or support attainment issues in conflict with the local air pollution control agency or state. The bill does not define the process for verification nor who is responsible for ensuring the air monitoring data was collected by equipment meeting FRM and FEM standards. This uncertainty and issues related to the reliability of the data could delay timely development and approval of the South Coast Air Quality Management Plans and the State Implementation Plan.

Staff recommends working with the authors to address the need for more funding for additional research, development, testing, assessment and education on the use of low-cost sensors and mobile platforms, and issues related to SLAMS.

Recommended Position: WORK WITH AUTHORS

ATTACHMENT 4B

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[116H1284]

.....

(Original Signature of Member)

117TH CONGRESS
1ST SESSION

H. R. _____

To amend the Clean Air Act to give States the option of monitoring covered criteria air pollutants in designated areas by greatly increasing the number of air quality sensors in exchange for greater regulatory flexibility in the methods of monitoring, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. SCHWEIKERT introduced the following bill; which was referred to the Committee on _____

A BILL

To amend the Clean Air Act to give States the option of monitoring covered criteria air pollutants in designated areas by greatly increasing the number of air quality sensors in exchange for greater regulatory flexibility in the methods of monitoring, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Crowd Sourcing of Environmental Data Act of 2021''.

SEC. 2. OPTION FOR EXPANDED MONITORING.

(a) IN GENERAL.—Section 110(a) of the Clean Air Act (42 U.S.C. 7410(a)) is amended by inserting after paragraph (3) the following:

''(4) OPTION FOR EXPANDED MONITORING.—

''(A) IN GENERAL.—Any State may include in a State implementation plan a program for monitoring one or more covered criteria air pollutants in one or more designated areas by—

''(i) continuing to use the monitoring system (including for purposes of baseline measurements) that was in operation as of the submission of the revision to the plan; and

''(ii) greatly increasing the number of air quality sensors, which may include mobile sensors, for such monitoring system.

''(B) STATE DISCRETION.—Subject to subparagraphs (C) and (D), the Administrator shall allow a State to make a revision to a State implementation plan in accordance with subparagraph (A) at the State's discretion.

''(C) ENSURING QUALITY.—On an annual basis, each State that conducts monitoring pursuant to this paragraph, as a condition on the continuation of such monitoring, shall demonstrate to the Administrator that the quality of the data produced through

such monitoring meets all applicable data quality standards under this Act.

''(D) REVIEW BY ADMINISTRATOR.—A State's annual demonstration under subparagraph (C) is deemed to have met the standard described in such subparagraph unless the Administrator issues a written response—

''(i) finding that such standard is not met; and

''(ii) explaining the basis for such finding.

''(E) GREATER REGULATORY FLEXIBILITY.—With respect to each designated area in which a State conducts monitoring pursuant to this paragraph, the Administrator—

''(i) shall not require any particular method of monitoring to be used or not used, so long as the data derived from such monitoring meets all applicable data quality standards under this Act, as described in subparagraph (C); and

''(ii) shall allow the State involved to consider data derived from monitoring pursuant to this paragraph in making any determination on whether an exceedance of the national ambient air quality standard for the criteria air pollutant involved has occurred.

''(F) DEFINITIONS.—In this paragraph:

''(i) The term 'covered criteria air pollutant' means an air pollutant for which air quality criteria have been issued under section 108(a), except that such term does not include carbon monoxide or nitrogen dioxide.

''(ii) The term 'designated area' means an area that is designated under section 107(d) as being in nonattainment, in attainment, or unclassifiable.''.

(b) REGULATIONS.—Not later than 12 months after the date of enactment of this Act, the Administrator of the Environmental Protection Agency shall promulgate final regulations to implement section 110(a)(4) of the Clean Air Act, as added by subsection (a). Such regulations shall specify how a State must demonstrate to the Administrator, as required by subparagraph (C) of such section 110(a)(4), that the quality of the data produced through monitoring pursuant to such section 110(a)(4) is at least as good as the quality of the data that would be produced for the respective air pollutants in the respective areas if the State did not exercise the option to conduct monitoring pursuant to such section 110(a)(4).

ATTACHMENT 4C

South Coast Air Quality Management District
Legislative Analysis Summary – S. 101 (Markey and Duckworth)
Version: As introduced, January 28, 2021
Analyst: SD/LTO

S. 101 (Markey and Duckworth)
Environmental Justice Mapping and Data Collection Act of 2021

Summary: This bill would form an interagency environmental justice (EJ) mapping committee, led by the U.S. Environmental Protection Agency (EPA), to identify criteria, find data gaps, create a data repository, and work with communities to create an interactive mapping tool to locate environmental justice communities based on cumulative impacts. The mapping tool will assist in the effort to direct at least 40% of climate investment funding into communities facing environmental justices.

Background: The state of California developed a mapping tool known as CalEnviroScreen based on environmental, health and socioeconomic information to produce scores for every census tract in the state. CalEnviroScreen is utilized by the Legislature and state agencies to identify EJ communities, including ranking to allocate funding. State programs that utilize CalEnviroScreen data include:

- SB 535 Disadvantaged Communities;
- Greenhouse Gas Reduction Fund program must be utilized for disadvantaged communities;
- Sustainable Communities Planning Grants and Incentive Programs;
- Affordable Housing and Sustainable Communities;
- Sustainable Agricultural Lands Conservation;
- Transit and Intercity Rail Capital Program;
- Low Carbon Transit Operation Program;
- Weatherization Upgrades and Renewable Energy;
- Sustainable Forests;
- Active Transportation Program; and
- Green Tariff Shared Renewables Program.

Additionally, South Coast AQMD utilizes CalEnviroScreen in combination with other sources of data including the Multiple Air Toxics Exposure Study (MATES) for environmental justice initiatives and programs. For example, South Coast AQMD first identified potential Year One AB 617 communities based on top 25% of MATES IV toxics cancer risk and top 25% of CalEnviroScreen 3.0.

Status: 1/28/2021, Introduced and referred to the Committee on Environment and Public Works.

Specific Provisions: S. 101 would create the federal "Environmental Justice Mapping Committee" (Interagency Committee) that would develop a comprehensive cumulative impacts mapping tool to identify EJ communities throughout the nation. The Interagency Committee would consist of representatives from relevant agencies, such as EPA, Commerce, Health and Human Services, Interior, Agriculture, Housing and Urban Development, Energy, and Transportation. The bill also would create an advisory council of stakeholders, at least half of

which would be representatives and members of communities harmed by environmental injustices and chaired by an EJ advocate. The Interagency Committee would:

- Identify and implement a methodology to determine the cumulative impacts of factors that fall into categories including demographics such as race and income related to socioeconomic hardship and social stressors, public health, and pollution burdens, resulting in EJ scores.
- Investigate how indicators of vulnerability to impacts of climate change may be used.
- Consider implementing regional factors or creating regional maps.
- Create an interactive tool capable of providing maps of cumulative EJ scores based on selected indicators in a region of size no larger than a census tract.
- Establish a method to self-identify as an EJ community via qualitative data.
- Update the indicators and methodology at least once every three years, and upload any new data sets at least yearly.
- Data should include, but is not limited to, public health metrics, toxic chemicals, economic demographics, air quality, and water quality.
- Conduct an audit would examine the granularity and accessibility of the data and include recommendations to other Federal entities to improve the quality, granularity, and transparency of, and public involvement in data collection and dissemination.
- Establish a publicly accessible EJ data repository.

The Interagency Committee in consultation with the stakeholder advisory council would develop a plan for comprehensive public engagement and incorporation of community feedback into the data and resulting mapping tool. The bill would authorize $20 million for fiscal years 2021 and 2022; and, $18 million for each fiscal year of 2023 through 2025.

S. 101 is supported by over 70 community-based organizations including GreenRoots, Sunrise Movement, Alternatives for Community and Environment, Missouri Coalition for the Environment, Action St. Louis, Front and Centered, Climate Justice Alliance, Michigan Environmental Justice Coalition, Deep South Center for Environmental Justice, California Environmental Justice Alliance, WE ACT for EJ, Evergreen Action, Renew Missouri, St. Louis County Branch of the NAACP, Union of Concerned Scientists, Data for Progress, Moms Clean Air Force, The Wilderness Society, and Sierra Club, in addition to over 40 leading environmental justice scholars. The bill is also supported in the House by Representatives Alan Lowenthal (CA-47), Nanette Diaz Barragán (CA-44), Grace Napolitano (CA-32), Jesús G. "Chuy" García (IL-04), Alcee L. Hastings (FL-20), Ro Khanna (CA-17), Adriano Espaillat (NY-13), Bennie Thompson (MI-02), , Terri A. Sewell (AL-07), Gwen S. Moore (WI-04), Debbie Wasserman Schultz (FL-23), Jerrold Nadler (NY-10), Mondaire Jones (NY-17), Eleanor Holmes Norton (D-DC), Mark DeSaulnier (CA-11), Alexandria Ocasio-Cortez (NY-14), Rashida Tlaib (MI-13), Bonnie Watson Coleman (NJ-12), Emanuel Cleaver, II (MO-05), Jamaal Bowman (NY-16), Juan Vargas (CA-51), Chellie Pingree (ME-01), Earl Blumenauer (OR-03), Ritchie Torres (NY-15), Gerald E. Connolly (VA-11), Lisa Blunt Rochester (D-Del.), Doris Matsui (CA-06), Hank Johnson (GA-04), A. Donald McEachin (VA-04), Diana DeGette (CO-01), Ayanna

Pressley (MA-07), Jim Cooper (TN-05), and Raul Grijalva (AZ-03) have joined the legislation as original co-sponsors.

Impacts on South Coast AQMD's Mission, Operations or Initiatives: The intent of S. 101, the "Environmental Justice Mapping and Data Collection Act of 2021" is positive for environmental justice communities in Southern California and the nation. Within California, nearly 67% of the State's EJ communities are located within the South Coast AQMD's jurisdiction. Staff recommend the following amendments to ensure South Coast AQMD has a role in developing the federal EJ mapping tool and the data utilized within the system.

- Page 3, Line 10, strike "and", after "water quality infrastructure," add "and industrial infrastructure and pollution control."

  This amendment would include infrastructure necessary to transition industry to cleaner technologies and pollution control.

- Page 13, Line 2 – after "communities," add, "including State and local agencies for public health and the environment, community members, industry and non-profit organizations."

  This amendment would ensure State and local agencies such as South Coast AQMD are actively engaged in the development of the federal environmental mapping and data program.

- Page 14, Line 23 – after "and" add "(IV) State and local agencies with public health and environmental responsibilities."

  This amendment would ensure State and local agencies such as South Coast AQMD are actively engaged in the development of the federal environmental mapping and data program.

- Page 17, Line 3 – after "groups;" add, "(dd) coordination with State and local agencies;"

  This amendment would ensure State and local agencies are included in outreach activities.

- Page 17, Line 11—after "transcript" add "add video".

  This amendment would add "video" as a methodology to share the information with stakeholders. South Coast AQMD's Zoom webcast recordings and Facebook Live streaming of meetings has enabled more community participation by making the information accessible.

- Page 18, Line 2 – after "council.", add "where State and local agency coordination to outreach and engage with environmental justice communities occurs, the Committee may provide sums as necessary as determined by the Administrator and in consultation with the advisory council.

  This amendment would enable EPA to reimburse State and local agencies for coordination of outreach and engagement related to the program.

- Page 20, Line 17 – before "air", add "criteria" and after "pollutants" add "and toxic air pollutants."

  This amendment specifies "criteria air pollutants and air toxic pollutants" versus "air pollution."

- Page 21, Line 8 -- after "infrastructure", add ", and goods movement related activity including but not limited to, medium- and heavy-duty trucks, ocean going vessels, rail, and other yard equipment."

  This amendment expands the types of facilities in proximity to EJ communities to include goods movement related activity.

- Page 21, Line 8 – after (IV), add "(V) title V facilities and those identified by State and local agencies with elevated health risks due to toxics."

  This amendment adds for consideration in the EJ mapping program title V facilities and other types of facilities as identified by State and local agencies.

- Page 21, Line 8 – after above amendment, add "(IV) regions where federal health-based standards for pollutants are not in attainment.

  This amendment adds "non-attainment of federal health-based standards for pollutants" as an area to identify and consider the effects upon the EJ communities.

Staff recommend a position of SUPPORT with AMENDMENTS to work with the bill author and our California Delegation on this landmark legislation which could have far reaching impacts on the development of future environmental justice programs and funding.

Recommended Position: SUPPORT WITH AMENDMENTS

ATTACHMENT 4D

RYA21063 K95 S.L.C.

117TH CONGRESS
1ST SESSION

S. ▮ ▮

To establish the Environmental Justice Mapping Committee, and for other purposes.

IN THE SENATE OF THE UNITED STATES

▮▮▮▮▮▮▮▮▮▮

Mr. MARKEY (for himself and Ms. DUCKWORTH) introduced the following bill; which was read twice and referred to the Committee on ▮▮▮▮▮▮▮▮▮▮

A BILL

To establish the Environmental Justice Mapping Committee, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Environmental Justice Mapping and Data Collection Act of 2021".

SEC. 2. FINDINGS.

Congress finds that—

(1) environmental hazards causing adverse health outcomes have disproportionately affected environmental justice communities as a result of sys-

temic injustices relating to factors that include race and income;

(2) environmental justice communities have increased vulnerability to the adverse effects of climate change and need significant investment to face current and future environmental hazards;

(3) the Federal Government has lacked a cohesive and consistent strategy to carry out the responsibilities of Federal agencies described in Executive Order 12898 (42 U.S.C. 4321 note; relating to Federal actions to address environmental justice in minority populations and low-income populations);

(4) it is necessary that the Federal Government meaningfully engage environmental justice communities in the process of developing a robust strategy to address environmental justice, including high levels of review, input, and consent;

(5) there is a lack of nationwide high-quality data relating to environmental justice concerns, such as socioeconomic factors, air pollution, water pollution, soil pollution, and public health, and a failure to update the existing data with adequate frequency;

(6) there is no nationally consistent method to identify environmental justice communities based on

the cumulative effects of socioeconomic factors, pollution burden, and public health;

(7) a method described in paragraph (6) is needed to correct for racist and unjust practices leading to historical and current environmental injustices through the targeted investment in environmental justice communities of at least 40 percent of the funds provided for a clean energy transition and other related investments, including transportation infrastructure, housing infrastructure, and water quality infrastructure;

(8) funds targeted for environmental justice communities should include set-asides for technical assistance and capacity building for environmental justice communities to access the funds;

(9) particular oversight and care are necessary when investing in environmental justice communities to ensure that existing issues are not exacerbated and new issues are not created, particularly issues relating to pollution burden and the displacement of residents;

(10) several States, academic institutions, and nonprofit organizations have engaged in cumulative impact environmental justice mapping efforts that can serve as references for a Federal mapping effort;

(11) many environmental justice communities, such as communities in "Cancer Alley" in the State of Louisiana, have been clearly affected by extreme environmental hazards such that the communities—

(A) are identifiable before the establishment of the tool under subsection (b) of section 5 and the completion of the data gap audit under subsection (d) of that section; and

(B) should be eligible for programs targeted toward environmental justice communities that have faced extreme environmental hazards before the establishment of that tool and the completion of that audit;

(12) in addition to investment in environmental justice communities, pollution reduction is essential to achieving equitable access to a healthy and clean environment and an equitable energy system; and

(13) specific policy and permitting decisions and investments may rely on different combinations of data sets and indicators relating to environmental justice, and race alone may be considered a criterion when assessing the susceptibility of a community to environmental injustice.

SEC. 3. DEFINITIONS.

In this Act:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the Environmental Protection Agency.

(2) ADVISORY COUNCIL.—The term "advisory council" means the advisory council established under section 4(d)(2)(A).

(3) COMMITTEE.—The term "Committee" means the Environmental Justice Mapping Committee established by section 4(a).

(4) ENVIRONMENTAL JUSTICE.—The term "environmental justice" means the fair treatment and meaningful involvement of all people regardless of race, color, culture, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies to ensure that each person enjoys—

(A) the same degree of protection from environmental and health hazards; and

(B) equal access to any Federal agency action relating to the development, implementation, and enforcement of environmental laws, regulations, and policies for the purpose of having a healthy environment in which to live, learn, work, and recreate.

(5) ENVIRONMENTAL JUSTICE COMMUNITY.—The term "environmental justice community" means a community with significant representation of communities of color, low-income communities, or Tribal and indigenous communities, that experiences, or is at risk of experiencing, higher or more adverse human health or environmental effects, as compared to other communities.

(6) GROUND-TRUTHING.—The term "ground-truthing" means a community fact-finding process by which residents of a community supplement technical information with local knowledge for the purpose of better informing policy and project decisions.

(7) RELEVANT STAKEHOLDER.—The term "relevant stakeholder" means—

(A) a representative of a regional, State, Tribal, or local government agency;

(B) a representative of a nongovernmental organization with experience in areas that may include Tribal relations, environmental conservation, city and regional planning, and public health;

(C) a representative of a labor union;

(D) a representative or member of—

(i) an environmental justice community; or

(ii) a community-based organization for an environmental justice community;

(E) an individual with expertise in cumulative impacts, geospatial data, and environmental justice, particularly such an individual from an academic or research institution; and

(F) an advocate with experience in environmental justice who represents an environmental justice community.

SEC. 4. ESTABLISHMENT OF COMMITTEE.

(a) IN GENERAL.—There is established a committee, to be known as the "Environmental Justice Mapping Committee".

(b) MEMBERSHIP.—

(1) IN GENERAL.—The Committee shall be composed of not fewer than 1 representative of each of the following:

(A) Of the Environmental Protection Agency—

(i) the Office of Air and Radiation;

(ii) the Office of Chemical Safety and Pollution Prevention;

(iii) the Office of International and Tribal Affairs;

(iv) the Office of Land and Emergency Management;

(v) the Office of Water;

(vi) the Office of Environmental Justice;

(vii) the Office of Research and Development; and

(viii) the Office of Public Engagement and Environmental Education.

(B) The Council on Environmental Quality.

(C) Of the Department of Commerce—

(i) the Office of Oceanic and Atmospheric Research, including not fewer than 1 representative of the Climate Program Office;

(ii) the Economics and Statistics Administration, including not fewer than 1 representative of the Bureau of Economic Analysis; and

(iii) the National Institute of Standards and Technology.

(D) Of the Department of Health and Human Services—

(i) the Centers for Disease Control and Prevention, not including the Agency for Toxic Substances and Disease Registry;

(ii) the Agency for Toxic Substances and Disease Registry;

(iii) the Administration for Children and Families;

(iv) of the National Institutes of Health—

(I) the National Institute of Environmental Health Sciences;

(II) the National Institute of Mental Health; and

(III) the National Institute on Minority Health and Health Disparities; and

(v) the Office for Civil Rights.

(E) Of the Department of the Interior—

(i) the Bureau of Indian Affairs;

(ii) the Office of Civil Rights; and

(iii) the United States Geological Survey.

(F) The Forest Service.

(G) The Department of Housing and Urban Development.

(H) The Department of Energy.

(I) The Department of Transportation.

(J) The Department of Justice.

(K) The Federal Energy Regulatory Commission.

(L) The Department of the Treasury.

(M) Such other Federal departments, agencies, and offices as the Administrator determines to be appropriate, particularly offices relating to public engagement.

(2) SELECTION OF REPRESENTATIVES.—The head of a department or agency described in paragraph (1) shall, in appointing to the Committee a representative of the department or agency, select a representative—

(A) of a component of the department or agency that is among the components that are the most relevant to the responsibilities of the Committee; or

(B) who has expertise in areas relevant to those responsibilities, such as demographic indicators relating to socioeconomic hardship, environmental justice, public engagement, public

health, exposure to pollution, future climate and extreme weather mapping, affordable energy, sustainable transportation, and access to water, food, and green space.

(3) CO-CHAIRS.—

(A) IN GENERAL.—The members of the Committee shall select 3 members to serve as co-chairs of the Committee—

(i) 1 of whom shall be a representative of the Environmental Protection Agency;

(ii) 1 of whom shall be a representative of the Council on Environmental Quality; and

(iii) 1 of whom shall have substantial experience in public engagement.

(B) TERMS.—Each co-chair shall serve for a term of not more than 3 years.

(C) RESPONSIBILITIES OF CO-CHAIRS.—The co-chairs of the Committee shall—

(i) determine the agenda of the Committee, in consultation with other members of the Committee;

(ii) direct the work of the Committee, including the oversight of a meaningful public engagement process; and

(iii) convene meetings of the Committee not less frequently than once each fiscal quarter.

(c) ADMINISTRATIVE SUPPORT.—

(1) IN GENERAL.—The Administrator shall provide technical and administrative support to the Committee.

(2) FUNDING.—The Administrator may carry out paragraph (1) using, in addition to any amounts made available under section 7, amounts authorized to be appropriated to the Administrator before the date of enactment of this Act and available for obligation as of that date of enactment.

(d) CONSULTATION.—

(1) IN GENERAL.—In carrying out the duties of the Committee, the Committee shall consult with relevant stakeholders.

(2) ADVISORY COUNCIL.—

(A) IN GENERAL.—The Committee shall establish an advisory council composed of a balanced proportion of relevant stakeholders, at

least ½ of whom shall represent environmental justice communities.

(B) CHAIR.—The advisory council shall be chaired by an environmental justice advocate or other relevant stakeholder with substantial experience in environmental justice.

(C) REQUIREMENTS.—Consultation described in paragraph (1) shall include—

(i) early and regular engagement with the advisory council, including in carrying out public engagement under paragraph (3); and

(ii) consideration of the recommendations of the advisory council.

(D) RECOMMENDATIONS NOT USED.—If the Committee does not use a recommendation of the advisory council, not later than 60 days after the date on which the Committee receives notice of the recommendation, the Committee shall—

(i) make available to the public on an internet website of the Environmental Protection Agency a written report describing the rationale of the Committee for not using the recommendation; and

(ii) submit the report described in clause (i) to the Committee on Environment and Public Works of the Senate and the Committee on Energy and Commerce of the House of Representatives.

(E) OUTREACH.—The advisory council may carry out public outreach activities using amounts made available under section 7 to supplement public engagement carried out by the Committee under paragraph (3).

(3) PUBLIC ENGAGEMENT.—

(A) IN GENERAL.—The Committee shall, throughout the process of carrying out the duties of the Committee described in section 5—

(i) meaningfully engage with relevant stakeholders, particularly—

(I) members and representatives of environmental justice communities;

(II) environmental justice advocates; and

(III) individuals with expertise in cumulative impacts and geospatial data; and

(ii) ensure that the input of the stakeholders described in clause (i) is central to the activities of the Committee.

(B) PLAN.—

(i) IN GENERAL.—In carrying out subparagraph (A), the Committee shall develop a plan, in consultation with the advisory council, for comprehensive public engagement with, and incorporation of feedback from, environmental justice advocates and members of environmental justice communities.

(ii) STRATEGIES TO OVERCOME BARRIERS TO PUBLIC ENGAGEMENT.—The plan developed under clause (i) shall include strategies to overcome barriers to public engagement, including—

(I) language barriers;

(II) transportation barriers;

(III) economic barriers; and

(IV) lack of internet access.

(iii) CONSIDERATION.—In developing the plan under clause (i), the Committee shall consider the diverse and varied experiences of environmental justice commu-

nities relating to the scope and types of environmental hazards and socioeconomic injustices.

(C) CONSULTATION AND SOLICITATION OF PUBLIC COMMENT.—

(i) IN GENERAL.—In carrying out subparagraph (A), not less frequently than once each fiscal quarter, the Committee shall consult with the advisory council and solicit meaningful public comment, particularly from relevant stakeholders, on the activities of the Committee.

(ii) REQUIREMENTS.—The Committee shall carry out clause (i) through means including—

(I) public notice of a meeting of the Committee occurring during the applicable fiscal quarter, which shall include—

(aa) notice in publications relevant to environmental justice communities;

(bb) notification to environmental justice communities through direct means, such as

community centers and schools; and

(cc) direct outreach to known environmental justice groups;

(II) public broadcast of that meeting, including soliciting and receiving comments by virtual means; and

(III) public availability of a transcript of that meeting through publication on an accessible website.

(iii) LANGUAGES.—The Committee shall provide each notice, notification, direct outreach, broadcast, and transcript described in clause (ii) in each language commonly used in the applicable environmental justice community, including through oral interpretation, if applicable.

(D) FUNDING.—Of amounts made available under section 7, the Administrator shall make available to the Committee such sums as are necessary for participation by relevant stakeholders in public engagement under this

paragraph, as determined by the Administrator, in consultation with the advisory council.

SEC. 5. DUTIES OF COMMITTEE.

(a) IN GENERAL.—The Committee shall—

(1) establish a tool described in subsection (b) to identify environmental justice communities, including the identification of—

(A) criteria to be used in the tool; and

(B) a methodology to determine the cumulative impacts of those criteria;

(2) assess and address data gaps in accordance with subsection (d); and

(3) collect data for the environmental justice data repository established under section 6.

(b) ESTABLISHMENT OF TOOL.—

(1) IN GENERAL.—The Committee, in consultation with relevant stakeholders and the advisory council, shall establish an interactive, transparent, integrated, and Federal Government-wide tool for assessing and mapping environmental justice communities based on the cumulative impacts of all indicators selected by the Committee to be integrated into the tool.

(2) REQUIREMENTS.—In establishing the tool under paragraph (1), the Committee shall—

(A) integrate into the tool multiple data layers of indicators that fall into categories including—

(i) demographics, particularly relating to socioeconomic hardship and social stressors, such as—

(I) race and ethnicity;

(II) low income;

(III) high unemployment;

(IV) low levels of home ownership;

(V) high rent burden;

(VI) high transportation burden;

(VII) low levels of educational attainment;

(VIII) linguistic isolation;

(IX) energy insecurity or high utility rate burden;

(X) food insecurity;

(XI) health insurance status and access to healthcare; and

(XII) membership in an Indian Tribe;

(ii) public health, particularly data that are indicative of sensitive populations, such as—

(I) rates of asthma;

(II) rates of cardiovascular disease;

(III) child leukemia or other cancers that correlate with environmental hazards;

(IV) low birth weight;

(V) maternal mortality;

(VI) rates of lead poisoning; and

(VII) rates of diabetes;

(iii) pollution burdens, such as pollution burdens created by—

(I) toxic chemicals;

(II) air pollutants;

(III) water pollutants;

(IV) soil contaminants; and

(V) perfluoroalkyl and polyfluoroalkyl substances; and

(iv) environmental effects, such as effects created by proximity to—

(I) risk management plan sites;

(II) hazardous waste facilities;

(III) sites on the National Priorities List developed by the President in accordance with section 105(a)(8)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9605(a)(8)(B)); and

(IV) fossil fuel infrastructure;

(B) investigate how further indicators of vulnerability to the impacts of climate change (including proximity and exposure to sea level rise, wildfire smoke, flooding, drought, rising average temperatures, extreme storms, and extreme heat, and financial burdens from flood and fire insurance) should be incorporated into the tool as an additional set of layers;

(C) identify and consider the effects of other indicators relating to environmental justice for integration into the tool as layers, including—

(i) safe, sufficient, and affordable drinking water, sanitation, and stormwater services;

(ii) access to and the quality of—

(I) green space and tree canopy cover;

(II) healthy food;

(III) affordable energy and water;

(IV) transportation;

(V) reliable communication systems, such as broadband internet;

(VI) child care;

(VII) high-quality public schools, early childhood education, and child care; and

(VIII) heath care facilities;

(iii) length of commute;

(iv) indoor air quality in multiunit dwellings;

(v) mental health;

(vi) labor market categories, particularly relating to essential workers; and

(vii) each type of utility expense;

(D) consider the implementation of specific regional indicators, with the potential—

(i) to create regionally and locally downscaled maps in addition to a national map;

(ii) to provide incentives for States to collect data and conduct additional analyses to capture conditions specific to their localities;

(iii) to provide resources for and engage in ground-truthing to identify and verify important data with community members; and

(iv) to develop companion resources for, and provide technical support to, regional, State, local, or Tribal governments to create their own maps and environmental justice scores with relevant regional, State, local, and Tribal data;

(E) identify a methodology to account for the cumulative impacts of all indicators selected by the Committee under subparagraph (A), in addition to other indicators as the Committee determines to be necessary, to provide relative environmental justice scores for regions that are—

(i) as small as practicable to identify communities; and

(ii) not larger than a census tract;

(F) ensure that the tool is capable of providing maps of environmental justice communities based on environmental justice scores described in subparagraph (E);

(G) ensure that users of the tool are able to map available layers together or independently as desired;

(H) implement a method for users of the tool to generate a map and environmental justice score based on a subset of indicators, particularly for the purpose of using the tool in addressing various policy needs, permitting processes, and investment goals;

(I) make the tool customizable to address specific policy needs, permitting processes, and investment goals;

(J) account for conditions that are not captured by the quantitative data used to develop the 1 or more maps and environmental justice scores comprising the tool, by—

(i) developing and executing a plan to perform outreach to relevant communities; and

(ii) establishing a mechanism by which communities can self-identify as en-

vironmental justice communities to be included in the tool, which may include citing qualitative data on conditions for which quantitative data are lacking, such as cultural loss in Tribal communities;

(K) consider that the tool—

(i) will be used across the Federal Government in screening Federal policies, permitting processes, and investments for environmental and climate justice impacts; and

(ii) may be used to assess communities for pollution reduction programs; and

(L) carry out such other activities as the Committee determines to be appropriate.

(c) TRANSPARENCY AND UPDATES.—

(1) IN GENERAL.—

(A) NOTICE AND COMMENT.—The Committee shall establish the tool described in subsection (b) after providing notice and an opportunity for public comment.

(B) HEARINGS.—In carrying out subparagraph (A), the Committee shall hold hearings, which shall be time- and language-appropriate,

in communities affected by environmental justice issues in geographically disparate States and Tribal areas.

(2) UPDATES.—

(A) ANNUAL UPDATES.—The Committee shall update the tool described in subsection (b) not less frequently than annually to account for data sets that are updated annually.

(B) OTHER UPDATES.—Not less frequently than once every 3 years, the Committee shall—

(i) update the indicators, methodology, or both for the tool described in subsection (b); and

(ii) reevaluate data submitted by Federal departments and agencies that is used for the tool.

(C) REPORTS.—After the initial establishment of the tool described in subsection (b) and each update under subparagraph (A) or (B), the Committee shall publish a report describing—

(i) the process for identifying indicators relating to environmental justice in the development of the tool;

(ii) the methodology described in subsection (b)(2)(E); and

(iii) the use of public input and community engagement in that process.

(3) TRAINING TUTORIALS AND SESSIONS.—

(A) IN GENERAL.—The Committee shall—

(i) develop virtual training tutorials and sessions for environmental justice communities for the use of the tool described in subsection (b); and

(ii) where practicable, provide in-person training sessions for environmental justice communities for the use of that tool.

(B) LANGUAGES.—The tutorials and sessions under subparagraph (A) shall be made available in each language commonly used in the applicable environmental justice community.

(4) PUBLIC AVAILABILITY.—

(A) IN GENERAL.—The Committee shall make available to the public on an internet website of the Environmental Protection Agency—

(i) the tool described in subsection (b);

(ii) each update under subparagraphs (A) and (B) of paragraph (2);

(iii) each report under paragraph (2)(C); and

(iv) the training tutorials and sessions developed under paragraph (3)(A)(i).

(B) ACCESSIBILITY.—The Committee shall make the tool, updates, and reports described in subparagraph (A) accessible to the public by publication in relevant languages and with accessibility functions, as appropriate.

(C) REQUIREMENT.—In carrying out subparagraph (A)(i), the Committee shall take measures to prevent the tool from being misused to discriminate against environmental justice communities, such as by providing safeguards against the use of downscaled data that may enable the identification of individuals.

(d) DATA GAP AUDIT.—

(1) IN GENERAL.—In establishing the tool described in subsection (b), the Committee shall direct relevant Federal departments and agencies to conduct an audit of data collected by the department or agency to identify any data that are relevant to envi-

ronmental justice concerns, including data relating to—

(A) public health metrics;

(B) toxic chemicals;

(C) socioeconomic demographics;

(D) air quality;

(E) water quality; and

(F) killings of individuals by law enforcement officers.

(2) REQUIREMENTS.—An audit described in paragraph (1) shall—

(A) examine the granularity and accessibility of the data;

(B) address the need for improved air quality monitoring; and

(C) include recommendations to other Federal departments and agencies on means to improve the quality, granularity, and transparency of, and public involvement in, data collection and dissemination.

(3) IMPROVEMENTS.—The Committee shall direct a Federal department or agency, in conducting an audit under paragraph (1), to address gaps in existing data collection that will assist the Committee in establishing and operating the tool described in

subsection (b), including by providing to the department or agency—

(A) benchmarks to meet in addressing the gaps;

(B) instructions for consistency in data formatting that will allow for inclusion of data in the environmental justice data repository described in section 6; and

(C) best practices for collecting data in collaboration with local organizations and partners, such as engaging in ground-truthing.

(4) REPORTS.—Not later than 180 days after a Federal department or agency has conducted an audit under paragraph (1), the Committee shall—

(A) make available to the public on an internet website of the Environmental Protection Agency a report describing the findings and conclusions of the audit, including the progress made by the Federal department or agency in addressing environmental justice data gaps; and

(B) submit the report described in subparagraph (A) to—

(i) the Committee on Environment and Public Works of the Senate;

(ii) the Committee on Health, Education, Labor, and Pensions of the Senate;

(iii) the Committee on Energy and Commerce of the House of Representatives; and

(iv) the Committee on Education and Labor of the House of Representatives.

SEC. 6. ENVIRONMENTAL JUSTICE DATA REPOSITORY.

(a) IN GENERAL.—The Administrator shall establish an environmental justice data repository to maintain—

(1) the data collected by the Committee through the establishment of the tool described in section 5(b) and the audits conducted under section 5(d)(1); and

(2) any subnational data collected under subsection (c)(2).

(b) UPDATES.—The Administrator shall update the data in the data repository described in subsection (a) as frequently as practicable, including every year if practicable, but not less frequently than once every 3 years.

(c) AVAILABILITY; INCLUSION OF SUBNATIONAL DATA.—The Administrator—

(1) shall make the data repository described in subsection (a) available to regional, State, local, and Tribal governments; and

(2) may collaborate with the governments described in paragraph (1) to include within that data repository subnational data in existence before the establishment of the tool described in section 5(b) and the completion of the audits under section 5(d)(1).

(d) REQUIREMENT.—The Administrator shall take measures to prevent the data in the data repository described in subsection (a) from being misused to discriminate against environmental justice communities, such as by providing safeguards against the use of downscaled data that may enable the identification of individuals.

SEC. 7. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Administrator to carry out this Act, including any necessary administrative costs of the Committee—

(1) $20,000,000 for each of fiscal years 2021 and 2022; and

(2) $18,000,000 for each of fiscal years 2023 through 2025.

SEC. 8. EFFECT.

Nothing in any provision of this Act relating to the tool described in section 5(b) prohibits a State from developing a map relating to environmental justice or pollution

burden that relies on different data, or analyzes data differently, than that tool.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 25

REPORT: Mobile Source Committee

SYNOPSIS: The Mobile Source Committee held a meeting remotely on Friday, February 19, 2021. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Dr. William A. Burke, Chair
Mobile Source Committee

SLR:ak

Committee Members

Present: Dr. William Burke/Chair
Supervisor Sheila Kuehl/Vice Chair
Supervisor Lisa Bartlett
Mayor Pro Tem Larry McCallon
Supervisor V. Manuel Perez

Absent: Mayor Pro Tem Rodriguez

Call to Order

Chair Burke called the meeting to order at 9:00 a.m.

INFORMATIONAL ITEM:

1. **Proposed Rule 2305 – Warehouse Indirect Source Rule (ISR) – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program and Proposed Rule 316 – Fees for Rule 2305**
   Ian MacMillan, Planning and Rules Manager, presented a summary of Proposed Rule 2305 – Warehouse ISR – WAIRE Program and Proposed Rule 316 – Fees for Rule 2305.

Mayor Pro Tem McCallon commented that mitigation fee funds should stay in the counties where they were generated and supported the installation of filters for communities near warehouses to reduce local impacts. Staff responded that language could be added to require that funds be used with the county where the mitigation fees are generated. Mayor Pro Tem McCallon inquired about the phase-in of emission reductions, adding that South Coast AQMD will not meet the ozone standard by 2023. Staff clarified that emission reductions would increase through time and not reach their full potential after the final stringency of the rule was achieved.

Supervisor Bartlett asked why Near Zero Emissions (NZE) yard trucks were not included in the WAIRE Menu. Mr. MacMillan responded that Zero Emissions (ZE) yard truck technology was commercially available and this equipment has been in use at warehouses. He added that staff had heard the concerns from this industry and would ensure the option to include NZE technology was available for Board decision, when considering the proposed rules. Supervisor Bartlett agreed with Mayor Pro Tem McCallon's comments on keeping funds in the community, but added that consideration be given to communities along truck travel corridors. She also stated that she would like to make sure that SIP creditable emission reductions are incorporated into the final rule.

Supervisor Kuehl expressed appreciation to see the rule develop and inquired how staff arrived at the 0.0025 stringency factor. Staff explained the range of analysis, business models, and costs imposed on the logistics industry were all factors in determining the recommended stringency. Supervisor Kuehl stated that the stringency requirement seemed lika a good recommendation and asked if operators could game the system due to the size applicability. Staff acknowledged that it was possible, but that a size threshold was established to ensure the program could be effectively administered. Staff will report to the Board on the effectiveness of the rule.

Many commenters spoke in favor of the proposed rules including Yvonne Martinez Watson, Sierra Club ; Mallory Warhurst, student; Emily Spokes, Jessica Craven, and Alyssa Bell, NELA Climate Collective; Gaby Mendez and Francis Yang, My Generation Campaign; Ivette Torres; Chris Chavez, Coalition for Clean Air and Wilmington AB 617 Community Steering Committee (CSC); Michelle Ghafar, Earthjustice; Elise Kalfayan, Glendale Environmental Coalition; Leah Louis-Prescott, Oakland office of Rocky Mountain Institute; Jessica Parks, student; Steven Jimenez, American Lung Association; Elliot Gonzales; Angie Balderas, Sierra Club and San Bernardino AB 617 CSC; Justice Sandoval, and Carlo de la Cruz, Sierra Club; Andrea Vidaurre, Warehouse Worker Resource Center; Florence Gharibian, Del Amo Action Committee; Luis Montes Jr., Inside Sustainability SoCal; and Taylor Thomas, East Yard Communities for Environmental Justice. These

commenters expressed similar sentiments for the need for a strong ISR with some calling for the rule to be three times stronger, that their communities of color are experiencing health impacts from warehouse related pollution aggravated by the COVID pandemic, they experience many bad air days, they have been waiting too long for this rule, only ZE technologies should be considered, the proposed rule could result in job growth in electrification industries, warehouse workers are struggling while the industry is profiting, and new warehouses continue to cause impacts on surrounding communities.

Jesse Marquez, Coalition for a Safe Environment, commented that additional assessment was needed on congestion, impacts to infrastructure such as freeways, and container yards, and pushed for only ZE options. He called for caps on the warehousing industry and brought up concerns about fumigants. Dr. Burke responded that a recent federal Government Accountability Office Report discussed the suppression of people of color, including housing policies that forced people to live in certain communities.

Harvey Eder, Public Solar Power Coalition, expressed support for analyzing solar and referenced the solar new deal.

Kari Then, resident of Moreno Valley, commented that fees should stay in the community near the warehouses that paid the fee. Supervisor Perez thanked all the speakers and requested the contact information from the speaker. He added that Coachella Valley gets pollution transported from Los Angeles and they feel the impacts of warehouses.

Mike Williams, California Chapter of the International Warehouse Logistics Association, commented that warehouses are a large part of the economy that people rely on for goods and jobs. He stated that warehouses do not control the trucks that visit the warehouses and that the technology needed is not available. Mr. Williams stated that the warehouse ISR would impose an economic burden on the industry that may lead to the re-evaluation of their location and the associated jobs. Peter Herzog, NAIOP, commented that the warehouse ISR was complex, and there are unanswered questions. He stated that the emission reductions were speculative, that no SIP credit can be identified, and urged the use of best science.

WRITTEN REPORTS:

2. **Rule 2202 Activity Report: Rule 2202 Summary Status Report**
   This item was received and filed.

3. **Monthly Report on Environmental Justice Initiatives: CEQA Document Commenting Update**
   This item was received and filed.

OTHER MATTERS:

4. **Other Business**
   There was no other business.

5. **Public Comment Period**
   Harvey Eder, Public Solar Power Coalition, expressed the need to phase out fossil fuels and to move towards solar renewable energy. He mentioned problems trying to file documents in federal court.

6. **Next Meeting Date**
   The next regular Mobile Source Committee meeting is scheduled for Friday, March 19, 2021.

Adjournment

The meeting adjourned at 11:10 a.m.

Attachments

1. Attendance Record
2. Rule 2202 Activity Report – Written Report
3. Monthly Report on Environmental Justice Initiatives: CEQA Document Commenting Update – Written Report

ATTACHMENT 1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
MOBILE SOURCE COMMITTEE MEETING
Attendance – February 19, 2021

Dr. William Burke	South Coast AQMD Board Member
Supervisor Lisa Bartlett	South Coast AQMD Board Member
Supervisor Sheila Kuehl	South Coast AQMD Board Member
Mayor Pro Tem Larry McCallon	South Coast AQMD Board Member
Supervisor V. Manuel Perez	South Coast AQMD Board Member
James Dinwiddie	Board Consultant (Bartlett)
Matt Holder	Board Consultant (Rodriguez)
Lorraine Lundquist	Board Consultant (Kuehl)
Kana Miyamoto	Board Consultant (Burke)
Mark Taylor	Board Consultant (Rutherford)
Ross Zellen	Board Consultant (Kracov)
Mark Abramowitz	Community Environmental Services
Angie Balderas	Sierra Club
Alyssa Bell	NELA Climate Collective
Stephanie Bream	California Council for Environmental and Economic Balance
Chris Chavez	Coalition for Clean Air
Jessica Craven	NELA Climate Collective
Carlo De La Cruz	Sierra Club
Harvey Eder	Public Solar Power Coalition
Michelle Ghafar	Earthjustice
Florence Gharibian	Del Amo Action Committee
Elliott Gonzalez	Public Member
Peter Herzog	NAIOP
Steven Jimenez	American Lung Association
Elise Kalfayan	Glendale Environmental Coalition
Frances Keeler	California Council for Environmental and Economic Balance
Leah Louis-Prescott	Oakland office of Rocky Mountain Institute
Jesse Marquez	Coalition for a Safe Environment
Bill La Marr	California Small Business Alliance
Adrian Martinez	Earthjustice
Debra Mendelsohn	Public Member
Gaby Mendez	Public Member
Luis Montes	Inside Sustainability SoCal
Jessica Parks	Public Member
David Pettit	Natural Resources Defense Council
David Rothbart	Los Angeles County Sanitation Districts
Justice Sandoval	Sierra Club
Patty Senecal	Western States Petroleum Association
Emily Spokes	NELA Climate Collective
Taylor Thomas	East Yard Communities for Environmental Justice
Keri Then	Public Member
Ivette Torres	Public Member

Andrea Vidaurre	Warehouse Worker Resource Center
Mallory Warhurst	Public Member
Yvonne Martinez Watson	Sierra Club
Peter Whittingham	Whittingham Public Affairs Advisors
Mike Williams	International Warehouse Logistics Association
Francis Yang	My Generation

Derrick Alatorre	South Coast AQMD Staff
Jason Aspell	South Coast AQMD Staff
Barbara Baird	South Coast AQMD Staff
Naveen Berry	South Coast AQMD Staff
Amir Dejbakhsh	South Coast AQMD Staff
Jo Kay Ghosh	South Coast AQMD Staff
Bay Gilchrist	South Coast AQMD Staff
Carol Gomez	South Coast AQMD Staff
Sheri Hanizavareh	South Coast AQMD Staff
Anissa (Cessa) Heard-Johnson	South Coast AQMD Staff
Mark Henninger	South Coast AQMD Staff
Victor Juan	South Coast AQMD Staff
Angela Kim	South Coast AQMD Staff
Sang Mi Lee	South Coast AQMD Staff
Jason Low	South Coast AQMD Staff
Ian MacMillan	South Coast AQMD Staff
Matt Miyasato	South Coast AQMD Staff
Ron Moskowitz	South Coast AQMD Staff
Wayne Nastri	South Coast AQMD Staff
Sarah Rees	South Coast AQMD Staff
Lisa Tanaka O'Malley	South Coast AQMD Staff
Zafiro Sanchez	South Coast AQMD Staff
Anthony Tang	South Coast AQMD Staff
Veera Tyagi	South Coast AQMD Staff
Jill Whynot	South Coast AQMD Staff
Jillian Wong	South Coast AQMD Staff
Paul Wright	South Coast AQMD Staff
Victor Yip	South Coast AQMD Staff

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

Rule 2202 Summary Status Report

Activity for January 1, 2021 - January 31, 2021

Employee Commute Reduction Program (ECRP)	
# of Submittals:	80

Emission Reduction Strategies (ERS)	
# of Submittals:	15

Air Quality Investment Program (AQIP) Exclusively		
County	**# of Facilities**	**$ Amount**
Los Angeles	0	$ 0
Orange	0	$ 0
Riverside	0	$ 0
San Bernardino	0	$ 0
TOTAL:	**0**	**$ 0**

ECRP w/AQIP Combination		
County	**# of Facilities**	**$ Amount**
Los Angeles	0	$ 0
Orange	0	$ 0
Riverside	0	$ 0
San Bernardino	0	$ 0
TOTAL:	**0**	**$ 0**

Total Active Sites as of January 31, 2021

ECRP (AVR Surveys)			TOTAL Submittals w/Surveys	AQIP	ERS	TOTAL
ECRP[1]	AQIP[2]	ERS[3]				
505	12	170	687	101	528	1,316
38.37%	0.91%	12.92%	52.20%	7.67%	40.13%	100%[4]

Total Peak Window Employees as of January 31, 2021

ECRP (AVR Surveys)			TOTAL Submittals w/Surveys	AQIP	ERS	TOTAL
ECRP[1]	AQIP[2]	ERS[3]				
386,424	3,864	73,218	463,506	14,495	211,644	689,645
56.03%	0.56%	10.62%	67.21%	2.10%	30.69%	100%[4]

Notes:
1. ECRP Compliance Option.
2. ECRP Offset (combines ECRP w/AQIP). AQIP funds are used to supplement the ECRP AVR survey shortfall.
3. ERS with Employee Survey to get Trip Reduction credits. Emission/Trip Reduction Strategies are used to supplement the ECRP AVR survey shortfall.
4. Totals may vary slightly due to rounding.

DRAFT

BOARD MEETING DATE: March 5, 2021 AGENDA NO.

REPORT: Lead Agency Projects and Environmental Documents Received

SYNOPSIS: This report provides a listing of CEQA documents received by the South Coast AQMD between January 1, 2021 and January 31, 2021, and those projects for which the South Coast AQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, February 19, 2021, Reviewed

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

SR:SN:JW:LS:MC

CEQA Document Receipt and Review Logs (Attachments A and B) – Each month, the South Coast AQMD receives numerous CEQA documents from other public agencies on projects that could adversely affect air quality. A listing of all documents received during the reporting period January 1, 2021 to January 31, 2021 is included in Attachment A. A list of active projects for which South Coast AQMD staff is continuing to evaluate or prepare comments for the December reporting period is included as Attachment B. A total of 46 CEQA documents were received during this reporting period and 8 comment letters were sent.

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. As required by the Environmental Justice Program Enhancements for FY 2002-03, approved by the Board in October 2002, each attachment notes proposed projects where the South Coast AQMD has been contacted regarding potential air quality-related environmental justice concerns. The South Coast AQMD has established an internal central contact to receive information on projects with potential air quality-related environmental justice concerns. The public may

contact the South Coast AQMD about projects of concern by the following means: in writing via fax, email, or standard letters; through telephone communication; and as part of oral comments at South Coast AQMD meetings or other meetings where South Coast AQMD staff is present. The attachments also identify, for each project, the dates of the public comment period and the public hearing date, if applicable. 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; general land use projects, etc. In response to the mitigation component, guidance information on mitigation measures was 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 South Coast AQMD's website at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies. Staff will continue compiling tables of mitigation measures for other emission sources.

Staff focuses on reviewing and preparing comments for projects: where the South Coast AQMD is a responsible agency; that may have significant adverse regional air quality impacts (e.g. special event centers, landfills, goods movement); that may have localized or toxic air quality impacts (e.g. warehouse and distribution centers); where environmental justice concerns have been raised; and which a lead or responsible agency has specifically requested South Coast AQMD review. If staff provided written comments to the lead agency as noted in the column "Comment Status," there is a link to the "South Coast AQMD Letter" under the Project Description. In addition, if staff testified at a hearing for the proposed project, a notation is provided under the "Comment Status." If there is no notation, then staff did not provide testimony at a hearing for the proposed project.

During the period of January 1, 2021 to January 31, 2021, the South Coast AQMD received 46 CEQA documents. Of the 54 documents listed in Attachments A and B:

- 8 comment letters were sent;
- 21 documents were reviewed, but no comments were made;
- 20 documents are currently under review;
- 0 documents did not require comments (e.g., public notices);
- 0 documents were not reviewed; and
- 5 documents were screened without additional review.

(The above statistics are from January 1, 2021 to January 31, 2021 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 South Coast AQMD's CEQA webpage at the following internet address: http://www.aqmd.gov/home/regulations/ceqa/commenting-agency.

South Coast AQMD Lead Agency Projects (Attachment C) – Pursuant to CEQA, the South Coast AQMD 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 for action is considered to be a "project" as defined by CEQA. For example, an Environmental Impact Report (EIR) is prepared when the South Coast AQMD, as lead agency, finds substantial evidence that the project may have significant adverse effects on the environment. Similarly, a Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the South Coast AQMD determines that the 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 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 South Coast AQMD is lead agency and is currently preparing or has prepared environmental documentation. As noted in Attachment C, the South Coast AQMD continued working on the CEQA documents for three active projects during January.

Attachments

A. Incoming CEQA Documents Log
B. Ongoing Active Projects for Which South Coast AQMD Has or Will Conduct a CEQA Review
C. Active South Coast AQMD Lead Agency Projects

DRAFT

ATTACHMENT A*
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Warehouse & Distribution Centers **SBC210105-05** Bloomington Business Park Specific Plan Project	The project consists of construction of two warehouses totaling 3,227,799 square feet on 213 acres. The project is located on the southeast corner of Santa Ana Avenue and Alder Avenue in the community of Bloomington. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/SBC210105-05.pdf Comment Period: 12/30/2020 - 1/29/2021 Public Hearing: 1/14/2021	Notice of Preparation	County of San Bernardino	South Coast AQMD staff commented on 1/19/2021
Warehouse & Distribution Centers **SBC210105-07** Barton Road Logistics Center	The project consists of demolition of 659,435 square feet of existing buildings and construction of two warehouses totaling 960,040 square feet on 45.52 acres. The project is located on the southeast corner of Walnut Avenue and Terrace Avenue. Reference SBC200218-03 Comment Period: 1/4/2021 - 2/17/2021 Public Hearing: 1/26/2021	Notice of Availability of a Draft Environmental Impact Report	City of Colton	** Under review, may submit written comments
Warehouse & Distribution Centers **SBC210119-01** Multi-Tenant Industrial Warehouse Project	The project consists of demolition of an existing structure and construction of a 179,400-square-foot warehouse on 9.01 acres. The project is located at 10797 New Jersey Street near the southeast corner of New Jersey Street and West Park Avenue. Comment Period: 1/18/2021 - 2/17/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Redlands	Document reviewed - No comments sent for this document received
Warehouse & Distribution Centers **SBC210126-02** Merrill Commerce Center Specific Plan	Staff provided comments on the Draft Environmental Impact Report for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/November/SBC201008-05.pdf. The project consists of construction of 7,014,000 square feet of warehouses and 1,441,000 square feet of business park uses on 376.3 acres. The project is located on the southwest corner of Eucalyptus Avenue and Carpenter Avenue. Reference SBC201008-05 and SBC190416-05 Comment Period: N/A Public Hearing: 2/2/2021	Final Environmental Impact Report	City of Ontario	Document reviewed - No comments sent for this document received

**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.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Industrial and Commercial **LAC210119-02** Beverly Hills Creative Offices Specific Plan Project	The project consists of construction of 11 office buildings totaling 128,282 square feet with subterranean parking on 2.49 acres. The project is located on the northeast corner of Alpine Drive and North Santa Monica Boulevard. Comment Period: 1/15/2021 - 2/19/2021 Public Hearing: 2/4/2021	Notice of Preparation	City of Beverly Hills	** Under review, may submit written comments
Industrial and Commercial **ORC210128-02** Lock and Leave Self Storage Project	The project consists of construction of a 108,148-square-foot self-storage facility on a 6.88-acre portion of 15.37 acres. The project is located at 25242 Arctic Ocean Drive near the southwest corner of Artic Ocean Drive and Commercentre Drive. Comment Period: 1/28/2021 - 2/26/2021 Public Hearing: 4/8/2021	Mitigated Negative Declaration	City of Lake Forest	Document reviewed - No comments sent for this document received
Industrial and Commercial **SBC210105-04** Mission Boulevard and Ramona Avenue Business Park Project	The project consists of demolition of existing structures and construction of 514,269 square feet of industrial uses on 27.74 acres. The project is located on the northwest corner of Mission Boulevard and Ramona Avenue. Comment Period: 1/4/2021 - 2/3/2021 Public Hearing: 1/13/2021	Notice of Preparation	City of Montclair	** Under review, may submit written comments
Waste and Water-related **LAC210112-03** Valley Generating Station Demolition Project (Units 1-4 and Associated Structures)	The project consists of demolition of ancillary structures for the decommissioned electricity generating units. The project is located at 11801 Sheldon Street near the northeast corner of San Fernando Boulevard and Shelton Street in the community of Sun Valley. Comment Period: 1/7/2021 - 2/8/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Los Angeles Department of Water and Power	Document reviewed - No comments sent for this document received

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **LAC210112-04** Stormwater Capture Parks Program	The project consists of construction of stormwater capture and runoff diversion facilities at nine City-owned parks on 829,000 square feet. The project is located along State Route (SR) 170 and is bounded by Interstate 5 to the north and east, SR 134 to the south, and Coldwater Canyon Avenue to the west in the communities of Pacoima, Sun Valley, and North Hollywood. Comment Period: 1/7/2021 - 2/8/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Los Angeles Department of Water and Power	Document reviewed - No comments sent for this document received
Waste and Water-related **LAC210114-02** Former Berg Metals Corporation	The project consists of evaluation of soil contaminated with lead, copper, antimony, and zinc on 10.6 acres. The project is located at 2652 Long Beach Avenue near the southeast corner of Long Beach Avenue and East 24th Street in the City of Los Angeles within the designated AB 617 Southeast Los Angeles community. Comment Period: 1/18/2021 - 4/19/2021 Public Hearing: N/A	Investigation and Site Evaluation	Department of Toxic Substances Control	** Under review, may submit written comments
Waste and Water-related **LAC210114-07** Quemetco, Inc.	The project consists of renewal of an existing hazardous waste facility permit and a tentative decision on the permit renewal. The project is located at 720 South Seventh Avenue near the northeast corner of South Seventh Avenue and Salt Lake Avenue in the City of Industry. Reference LAC191115-02 and LAC180726-06 Comment Period: N/A Public Hearing: N/A	Community Notice	Department of Toxic Substances Control	** Under review, may submit written comments
Waste and Water-related **LAC210119-04** Pico Union Remediation Project	The project consists of development of cleanup actions to remove soil contaminated with arsenic and lead on 0.3 acres. The project is located at 1554 West 11th Place on the southeast corner of West 11th Place and South Union Avenue in the City of Los Angeles. Comment Period: 1/7/2021 - 2/5/2021 Public Hearing: N/A	Draft Removal Action Workplan	Department of Toxic Substances Control	** Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **ORC210106-01** The Former Endevco Corporation	Staff provided comments on the Draft Site Investigation and Corrective Action for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/December/ORC201124-09.pdf. The project consists of development of cleanup actions to remediate soil contaminated with volatile organic compounds and a land use covenant to prohibit future sensitive land uses on 15.3 acres. The project is located at 30700 Rancho Viejo Road near the southeast corner of Rancho Viejo Road and Malaspina Road in the City of San Juan Capistrano. Reference ORC201124-09 Comment Period: N/A Public Hearing: N/A	Response to Comments	Department of Toxic Substances Control	Document reviewed - No comments sent for this document received
Waste and Water-related **ORC210112-08** General Electric International, Inc., Los Angeles Service Center	The project consists of modifications to an existing hazardous waste storage facility permit to update emergency contact information. The project is located at 3601 East La Palma Avenue on the northeast corner of East La Palma Avenue and North Grove Street in the City of Anaheim. Reference ORC160628-01 and ORC160406-03 Comment Period: N/A Public Hearing: N/A	Permit Modification	Department of Toxic Substances Control	Document reviewed - No comments sent for this document received
Waste and Water-related **ORC210112-09** Ascon Landfill Site	The project consists of collection and analysis of soil and soil vapor samples to identify areas that may have the potential to generate odors on 38 acres. The project is located at 21641 Magnolia Street on the southwest corner of Hamilton Avenue and Magnolia Street in the City of Huntington Beach. Reference LAC160818-07 and LAC150630-21 Comment Period: N/A Public Hearing: N/A	Odor Assessment Field Investigation	Department of Toxic Substances Control	** Under review, may submit written comments
Waste and Water-related **ORC210126-04** Former La Veta Refuse Disposal Station	The project consists of development of post landfill closure improvements, groundwater monitoring, and a land use covenant to prohibit future sensitive land uses on 5.95 acres. The project is located at 2205 East Palmyra Avenue on the northwest corner of East Palmyra Avenue and South Tracy Lane in the City of Orange. Comment Period: N/A Public Hearing: N/A	Post Closure Land Use Plan	Department of Toxic Substances Control	** Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **RVC210112-02** Integrated Vector Management Program	The project consists of renewal of an existing national pollutant discharge elimination system permit to continue suppression of vector populations and arbovirus transmission. The project encompasses 2,400 square miles of service area and includes cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, Rancho Mirage, and unincorporated areas of Riverside County in the designated AB 617 Eastern Coachella Valley community. Reference RVC161223-02, RVC160205-02, RVC131220-02, and RVC111222-02 Comment Period: N/A Public Hearing: N/A	Initial Project Consultation	Coachella Valley Mosquito and Vector Control District	Document reviewed - No comments sent for this document received
Waste and Water-related **SBC210112-10** Advanced Environmental, Inc. DBA World Oil Environmental Services	Staff provided comments on the Draft Standardized Hazardous Waste Facility Permit Renewal for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/November/SBC200922-04.pdf. The project consists of renewal of a hazardous waste facility permit to continue treatment, storage, and disposal of hazardous wastes on 4.3 acres. The project is located at 13579 Whittram Avenue on the southwest corner of Mulberry Avenue and Whittram Avenue in the City of Fontana. Reference SBC200922-04 and SBC171018-02 Comment Period: N/A Public Hearing: N/A	Response to Comments	Department of Toxic Substances Control	Document reviewed - No comments sent for this document received
Warehouse & Distribution Centers **SBC210126-06** Majestic Chino Heritage Project	The project consists of filling of 608,896 cubic yards of soil for future development of two warehouses totaling 2,082,750 square feet on 96.9 acres. The project is located on the southwest corner of Mountain Avenue and Bickmore Avenue in the City of Chino. Reference SBC200522-01 and SBC190322-09 Comment Period: 1/25/2021 - 2/24/2021 Public Hearing: N/A	Notice of Availability of a Draft Environmental Assessment	United States Army Corps of Engineers	Document reviewed - No comments sent for this document received
Transportation **LAC210119-03** The Old Road Over Castaic Creek Project	The project consists of seismic and structural improvements to an existing bridge 247 feet in length and 35 feet in width. The project is located parallel to Interstate 5 between Live Oak Road and Bizcailuz Drive in the community of Castaic. Comment Period: 1/19/2021 - 2/18/2021 Public Hearing: N/A	Mitigated Negative Declaration	Los Angeles County Department of Public Works	Document reviewed - No comments sent for this document received

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Transportation **RVC210112-06** State Route 74 Bridge Replacement Project	The project consists of widening two existing bridges 12 feet in width for each lane to meet crash and safety standards. The project is located at two sites along State Route (SR) 74: 1) Strawberry Creek Bridge at Post Mile (PM) 53.5 near the northwest corner of Delano Drive and Idyllbrook Drive and 2) Morrill Canyon Bridge at PM 3.08 near the southeast corner of SR 74 and Rocky Road in Riverside County. Comment Period: 1/12/2021 - 2/8/2021 Public Hearing: 1/21/2021	Notice of Intent to Adopt a Mitigated Negative Declaration	California Department of Transportation	Document reviewed - No comments sent for this document received
Institutional (schools, government, etc.) **LAC210126-03** Alexander Hamilton High School Comprehensive Modernization Project	Staff provided comments on the Negative Declaration for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/November/LAC201020-02.pdf. The project consists of demolition of 126,878 square feet of existing structures, modernization of two buildings totaling 84,745 square feet, and construction of five school facilities totaling 149,173 square feet on 27.7 acres. The project is located on the southwest corner of South Robertson Boulevard and Cattaraugus Avenue in the City of Los Angeles. Reference LAC201020-02 Comment Period: N/A Public Hearing: 2/9/2021	Response to Comments	Los Angeles Unified School District	Document reviewed - No comments sent for this document received
Medical Facility **LAC210105-01** 210 South Grand Avenue Medical Office Building Project	The project consists of construction of a 20,974-square-foot building on 6.4 acres. The project is located at 210 South Grand Avenue on the southeast corner of South Grand Avenue and West Carroll Avenue. Comment Period: 12/30/2020 - 1/28/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Glendora	Document reviewed - No comments sent for this document received
Medical Facility **ORC210107-01** University of California, Irvine Campus Medical Complex	Staff provided comments on the Draft Subsequent Environmental Impact Report for the project, which can be accessed at: http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2020/November/ORC201008-03.pdf. The project consists of construction of medical facilities totaling 375,000 square feet on 14.5 acres. The project is located near the southwest corner of Jamboree Road and Campus Drive in the City of Irvine. Reference ORC201008-03 and ORC200304-03 Comment Period: N/A Public Hearing: N/A	Response to Comments	Regents of the University of California	Document reviewed - No comments sent for this document received

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Retail **LAC210121-01** 11469 Jefferson Boulevard Project	The project consists of demolition of 33,813 square feet of existing structures and construction of a 111,000-square-foot hotel with 175 rooms and subterranean parking on 0.78 acres. The project is located at 11469 Jefferson Boulevard on the northwest corner of Jefferson Boulevard and Slauson Avenue. Comment Period: 1/21/2021 - 2/19/2021 Public Hearing: N/A	Mitigated Negative Declaration	City of Culver City	Document reviewed - No comments sent for this document received
Retail **RVC210126-05** 76 Gas Station C-Store/Q.S.R. and Retail	The project consists of construction of 13,960 square feet of retail uses, a gasoline service station with 12 pumps, and a 3,960-square-foot fueling canopy on 1.2 acres. The project is located at 41480 Sanborn Avenue on the southeast corner of Sanborn Avenue and Jefferson Avenue. Comment Period: 1/19/2021 - 2/16/2021 Public Hearing: 2/18/2021	Site Plan	City of Temecula	** Under review, may submit written comments
General Land Use (residential, etc.) **LAC210112-01** Baseline Road Single-Family Residential and Annexation Tentative Tract Map 82001 Project	The project consists of construction of seven residential units totaling 243,720 square feet, a 2.66-acre stormwater and drainage basin, and 10.75 acres of open space on 19.44 acres. The project is located on the northwest corner of Baseline Road and Broken Spur Road. Comment Period: 12/10/2020 - 1/8/2021 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration (received after close of comment period)	City of La Verne	Document reviewed - No comments sent for this document received
General Land Use (residential, etc.) **LAC210114-03** Angels Landing Project	The project consists of construction of two buildings totaling 1,269,150 square feet with 432 residential units, 515 hotel rooms, and subterranean parking on 2.24 acres. The project is located at 361 South Hill Street on the northwest corner of Hill Street and Fourth Street in the community of Central City. Reference LAC190404-02 Comment Period: 1/14/2021 - 3/1/2021 Public Hearing: N/A	Draft Environmental Impact Report	City of Los Angeles	** Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
General Land Use (residential, etc.) **LAC210114-06** Imperial Avalon Mixed-Use Project	The project consists of demolition of existing structures and construction of 1,213 residential units totaling 1,530,894 square feet, 7,152 square feet of commercial uses, and 647,027 square feet of parking uses on 27.31 acres. The project is located at 21207 South Avalon Boulevard near the northwest corner of South Avalon Boulevard and East 213th Street in the designated AB 617 Wilmington, Carson, West Long Beach community. Comment Period: 1/13/2021 - 2/12/2021 Public Hearing: 1/28/2021	Notice of Preparation	City of Carson	** Under review, may submit written comments
General Land Use (residential, etc.) **LAC210121-03** One San Pedro Specific Plan	The project consists of demolition of an existing residential building with 478 units and construction of 1,390 residential units, 85,000 square feet of amenities, and 45,000 square feet of retail uses on 21 acres. The project is located at 275 West First Street on the southeast corner of West First Street and North Centre Street in the community of San Pedro. Comment Period: 1/13/2021 - 2/12/2021 Public Hearing: 2/6/2021	Notice of Preparation	City of Los Angeles Housing Authority	** Under review, may submit written comments
General Land Use (residential, etc.) **LAC210121-04** Gardena Transit-Oriented Development Specific Plan Project	The project consists of demolition of a 24,990-square-foot building, and construction of 265 residential units and 15,000 square feet of open space on 1.33 acres. The project is located near the southeast corner of El Segundo Boulevard and Crenshaw Boulevard. Reference LAC200820-05 Comment Period: 1/15/2021 - 3/1/2021 Public Hearing: N/A	Draft Environmental Impact Report	City of Gardena	Document reviewed - No comments sent for this document received
General Land Use (residential, etc.) **ORC210126-01** Cypress Town Center	The project consists of construction of 135 residential units on seven acres. The project is located near the southwest corner of Vessels Circle and Walker Street. Reference ORC201001-03 Comment Period: 1/22/2021 - 3/8/2021 Public Hearing: N/A	Draft Environmental Impact Report	City of Cypress	Document reviewed - No comments sent for this document received

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
General Land Use (residential, etc.) **RVC210112-05** Ventana Specific Plan	The project consists of construction of 103 residential units totaling 1,967,605 square feet on 45.17 acres. The project is located near the northeast corner of Madison Street and Avenue 50. Comment Period: 1/7/2021 - 2/8/2021 Public Hearing: N/A	Notice of Preparation	City of Indio	** Under review, may submit written comments
General Land Use (residential, etc.) **RVC210119-05** MA20276	The project consists of subdivision of 9.76 acres for future development of 176 residential units. The project is located at 10001 Limonite Avenue on the northwest corner of Bain Street and Limonite Avenue. Reference RVC200602-02 Comment Period: 1/19/2021 - 1/29/2021 Public Hearing: N/A	Site Plan	City of Jurupa Valley	Document reviewed - No comments sent for this document received
General Land Use (residential, etc.) **SBC210105-02** TREH Development	The project consists of construction of 166 residential units totaling 378,972 square feet, 78,291 square feet of retail uses, a 1,825-square-foot car wash facility, and a gasoline service station with 16 pumps on 19.81 acres. The project is located on the northeast corner of Greenspot Road and State Route 210. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/SBC210105-02.pdf Comment Period: 1/5/2021 - 1/18/2021 Public Hearing: N/A	Site Plan	City of Highland	South Coast AQMD staff commented on 1/12/2021
General Land Use (residential, etc.) **SBC210105-08** Rancho del Prado Specific Plan	The project consists of construction of 350 residential units totaling 3,537,072 square feet and 121.7 acres of open space on 209.4 acres. The project is located near the northeast corner of Reche Canyon Road and Scotch Lane. Comment Period: 1/5/2021 - 2/3/2021 Public Hearing: 1/13/2021	Notice of Preparation	City of Colton	** Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Plans and Regulations **LAC210105-03** County of Los Angeles Housing Element Update	The project consists of updates to the County's General Plan Housing Element to assess housing needs, densities, and development standards. The project encompasses 4,083 square miles and is bounded by Ventura County to the north, counties of Riverside and San Bernardino to the east, Orange County to the south, and the Pacific Ocean to the west. The project includes three designated AB 617 communities: 1) East Los Angeles, Boyle Heights, West Commerce, 2) Southeast Los Angeles, and 3) Wilmington, Carson, West Long Beach. Comment Period: 1/5/2021 - 2/4/2021 Public Hearing: 1/23/2021	Notice of Preparation	County of Los Angeles	** Under review, may submit written comments
Plans and Regulations **LAC210114-01** Los Angeles Zoo Vision Plan	The project consists of development of policies, programs, and strategies to guide future development and recreational services with a planning horizon of 2040 on 133 acres. The project is located at 5333 Zoo Drive on the southwest corner of Zoo Drive and Western Heritage Way in the community of Hollywood. Reference LAC190125-02 Comment Period: 12/17/2020 - 2/15/2021 Public Hearing: 1/13/2021	Notice of Availability of a Draft Environmental Impact Report	City of Los Angeles	** Under review, may submit written comments
Plans and Regulations **LAC210114-04** Hotel Development Standards General Plan and Zoning Code Amendment Project	The project consists of updates to the City's General Plan Land Use Element and zoning designations to include development standards and design guidelines for amenity hotels. The project encompasses 5.86 square miles and is bounded by City of Hawthorne to the north, City of Compton to the east, cities of Carson and Torrance to the south, and cities of El Segundo, Manhattan Beach, and Redondo Beach to the west. Comment Period: 1/14/2021 - 2/3/2021 Public Hearing: 2/16/2021	Mitigated Negative Declaration	City of Gardena	Document reviewed - No comments sent for this document received
Plans and Regulations **LAC210114-05** 2019 Facilities Master Plan Update to the 2015 Facilities Master Plan	The project consists of development of standards, policies, and programs to guide future development of school facilities and services with a planning horizon of 2025. The project encompasses three campuses: 1) the Verdugo Campus at 1500 North Verdugo Road on the northeast corner of North Verdugo Road and East Mountain Street in the City of Glendale; 2) the Garfield Campus at 1122 East Garfield Avenue on the southeast corner of East Garfield Avenue and South Adams Street in the City of Glendale; and 3) Montrose Campus at 2340 Honolulu Avenue near the southeast corner of Honolulu Avenue and Wickham Way in the community of Montrose within Los Angeles County. Comment Period: 1/14/2021 - 3/1/2021 Public Hearing: N/A	Notice of Availability of a Draft Supplemental Environmental Impact Report	Glendale Community College District	** Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 1, 2021 to January 31, 2021

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Plans and Regulations **LAC210121-02** Citywide Housing Element 2021-2029 Update and Safety Element Update	The project consists of development of policies, goals, and programs to comply with state, regional, and local housing and safety policies and guidelines with a planning horizon of 2029. The project encompasses 468.67 square miles and is bounded by City of Santa Clarita to the north, City of Burbank to the east, State Route 1 to the south, and City of Calabasas to the west. Comment Period: 1/13/2021 - 2/15/2021 Public Hearing: N/A	Notice of Preparation	City of Los Angeles	** Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT B*
ONGOING ACTIVE PROJECTS FOR WHICH SOUTH COAST AQMD HAS OR IS CONTINUING TO CONDUCT A CEQA REVIEW

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Airports **LAC201029-01** Los Angeles International Airport (LAX) Airfield and Terminal Modernization Project	The project consists of construction of an automated people mover station, a pedestrian bridge, an 11-gate concourse facility, and a 12-gate terminal. The project will also include westerly extension of one taxiway, reconfiguration of runway exits, and removal of remote gates. The project is located in the north and south airfields within the Los Angeles International Airport. The north airfield is located near the northeast corner of Pershing Drive and Sepulveda Boulevard. The south airfield is located at Taxiway C between Sepulveda Boulevard and Aviation Boulevard. Reference LAC190619-11 and LAC190404-01 Comment Period: 10/29/2020 - 3/15/2021 Public Hearing: 12/1/2020	Draft Environmental Impact Report	Los Angeles World Airports	**Under review, may submit written comments
Transportation **LAC201229-03** Inglewood Transit Connector Project	The project consists of construction of an automated people mover system with dual guideways and support facilities. The project is located on the northwest corner of West Century Boulevard and South Prairie Avenue. Reference LAC200916-09 and LAC180717-13 Comment Period: 12/23/2020 - 2/8/2021 Public Hearing: 1/13/2021	Notice of Availability of a Draft Environmental Impact Report	City of Inglewood	**Under review, may submit written comments
Warehouse & Distribution Centers **SBC201211-04** Olive Avenue Development Project	The project consists of construction of two warehouses totaling 679,390 square feet on 31.08 acres. The project is located near the northeast corner of West Baseline Road and North Fitzgerald Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/SBC201211-04.pdf Comment Period: 12/2/2020 - 1/21/2021 Public Hearing: N/A	Notice of Preparation	City of Rialto	South Coast AQMD staff commented on 1/7/2021
Industrial and Commercial **LAC201208-03** New Beatrice West Project	The project consists of demolition of 87,881 square feet of structures, and construction of a 199,500-square-foot office building with subterranean parking and 38,033 square feet of open space on 4.51 acres. The project is located on the northeast corner of West Beatrice Street and South Jandy Place in the community of Palms-Mar Vista-Del Rey. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/LAC201208-03.pdf Comment Period: 12/8/2020 - 1/8/2021 Public Hearing: N/A	Notice of Preparation	City of Los Angeles	South Coast AQMD staff commented on 1/7/2021

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.
** Disposition may change prior to Governing Board Meeting

ATTACHMENT B
ONGOING ACTIVE PROJECTS FOR WHICH SOUTH COAST AQMD HAS OR IS CONTINUING TO CONDUCT A CEQA REVIEW

SOUTH COAST AQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **LAC201117-07** Portuguese Bend Landslide Mitigation Project	The project consists of construction of surface water and groundwater drainage systems and structural reinforcement to control landslide. The project encompasses 285 acres and is bounded by Buma Road to the north and east, the Pacific Ocean to the south, and Peppertree Drive to the west. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/LAC201117-07.pdf Comment Period: 11/12/2020 - 1/15/2021 Public Hearing: 12/19/2020	Notice of Preparation	City of Rancho Palos Verdes	South Coast AQMD staff commented on 1/7/2021
Retail **LAC201217-03** 1000 Seward Project	The project consists of construction of a 150,600-square-foot office building with subterranean parking on 0.78 acres. The project is located on the northeast corner of North Seward Street and West Romaine Street in the community of Hollywood. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/LAC201217-03.pdf Comment Period: 12/22/2020 - 1/22/2021 Public Hearing: 1/7/2021	Notice of Preparation	City of Los Angeles	South Coast AQMD staff commented on 1/19/2021
General Land Use (residential, etc.) **ORC201222-02** Legacy at Coto California Grand Villages	The project consists of construction of a 154,131-square-foot senior living facility with 95 units and subterranean parking on 3.86 acres. The project is located on the northwest corner of Avenida La Caza and Via Pavo Real in the community of Coto de Caza. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/ORC201222-02.pdf Comment Period: 12/15/2020 - 1/29/2021 Public Hearing: N/A	Notice of Preparation	County of Orange	South Coast AQMD staff commented on 1/19/2021
General Land Use (residential, etc.) **RVC201222-03** Oak Springs Ranch Phase II Project	The project consists of construction of 288 residential units totaling 561,488 square feet on 12.98 acres. The project is located near the southwest corner of Inland Valley Drive and Clinton Keith Road. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2021/january/RVC201222-03.pdf Comment Period: 12/22/2020 - 1/20/2021 Public Hearing: 1/11/2021	Notice of Preparation	City of Wildomar	South Coast AQMD staff commented on 1/19/2021

- Project has potential environmental justice concerns due to the nature and/or location of the project.
** Disposition may change prior to Governing Board Meeting

ATTACHMENT C
ACTIVE SOUTH COAST AQMD LEAD AGENCY PROJECTS THROUGH JANUARY 31, 2021

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
Matrix Oil is proposing to: 1) install one new flare with a maximum rating of 39 million British thermal units per hour (MMBtu/hr) at Site 3 of the Sansinena Oil Field; and 2) increase the throughput of the existing flare at Site 9 from the previous permit limit of 13.65 million standard cubic feet over a 30-day period (MMSCF/30 days) to the maximum rating of 39 MMBtu/hr which is equivalent to 25.39 MMSCF/30 days.	Matrix Oil	Mitigated Negative Declaration	The consultant provided a preliminary draft Mitigated Negative Declaration which is undergoing South Coast AQMD staff review.	Yorke Engineering
Quemetco is proposing to modify existing South Coast AQMD permits to allow the facility to recycle more batteries and to eliminate the existing daily idle time of the furnaces. The proposed project will increase the rotary feed drying furnace feed rate limit from 600 to 750 tons per day and increase the amount of total coke material allowed to be processed. In addition, the project will allow the use of petroleum coke in lieu of or in addition to calcined coke, and remove one existing emergency diesel-fueled internal combustion engine (ICE) and install two new emergency natural gas-fueled ICEs.	Quemetco	Environmental Impact Report (EIR)	A Notice of Preparation/Initial Study (NOP/IS) was released for a 56-day public review and comment period from August 31, 2018 to October 25, 2018, and 154 comment letters were received. Two CEQA scoping meetings were held on September 13, 2018 and October 11, 2018 in the community. South Coast AQMD staff is reviewing the preliminary Draft EIR and has provided comments to the consultant.	Trinity Consultants
Sunshine Canyon Landfill is proposing to modify its South Coast AQMD permits for its active landfill gas collection and control system to accommodate the increased collection of landfill gas. The proposed project will: 1) install two new low emissions flares with two additional 300-hp electric blowers; and 2) increase the landfill gas flow limit of the existing flares.	Sunshine Canyon Landfill	Subsequent Environmental Impact Report (SEIR)	South Coast AQMD staff reviewed and provided comments on the preliminary air quality analysis and health risk assessment (HRA), which are being addressed by the consultant.	SCS Engineers

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 26

REPORT: Stationary Source Committee

SYNOPSIS: The Stationary Source Committee held a meeting remotely on Friday, February 19, 2021. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Ben Benoit, Chair
Stationary Source Committee

AD:cr

Committee Members

Present**:** Mayor Pro Tem Ben Benoit (Chair)
Supervisor Sheila Kuehl (Vice Chair)
Senator Vanessa Delgado (Ret.)
Board Member Gideon Kracov
Vice Mayor Rex Richardson
Supervisor Janice Rutherford

Absent: None

Call to Order

Chair Benoit called the meeting to order at 10:30 a.m.

INFORMATIONAL ITEMS:

1. **Update on the Development of Proposed Rule 1109.1**
   Susan Nakamura, Assistant Deputy Executive Officer/Planning, Rule Development and Area Sources, presented an update on the development of Proposed Rule (PR) 1109.1 which establishes NOx BARCT limits for combustion equipment at refineries and associated facilities, and highlighted key remaining issues. Supervisor Rutherford asked when the cost data was collected, what limit was being evaluated at that time, and suggested a third-party review since there seems to be

different costs from staff and the refineries. Ms. Nakamura responded that the cost data was collected in the 2018-2019 timeframe, staff was evaluating a 2 ppm limit, and the data was reviewed by our third-party consultant. Executive Officer Wayne Nastri added that staff will continue to evaluate the costs and highlighted that costs would decrease if the proposed limit goes to 5 ppm.

Board Member Kracov asked if BARCT is a number and a limit. Staff confirmed that BARCT is a numerical limit.

Board Member Kracov asked whether AB 617 allows for consideration of alternative approaches. Ms. Nakamura responded that an alternative approach could be used to establish an emission target based on a proposed BARCT limit and to achieve the target through averaging emissions over several units in that category. Mayor Pro Tem Benoit asked whether a facility-cap could be an alternative to achieve localized emissions. Ms. Nakamura agreed that both approaches are feasible as long as the approach is approvable by U.S. EPA since PR 1109.1 will be submitted into the SIP. Mr. Nastri confirmed that AB 617 currently allows for alternative approaches.

Supervisor Kuehl highlighted the use of ultra low NOx burners in old combustion units in the Bay Area in a command and control approach and asked whether their equipment was challenged by safety concerns. Ms. Nakamura noted the Bay Area AQMD refinery rule has a different regulatory structure than PR 1109.1 because it of limits talk with the NOx emissions through a refinery-wide approach. Staff will talk with Bay Area AQMD staff. Supervisor Kuehl expressed concern that refinery workers are being told the rule will result in job losses when there is potential for more work to install and operate control equipment. She asked whether an evaluation of PR 1109.1 impacts on job gain/loss was conducted. Ms. Nakamura added that staff will provide an assessment of job impacts.

Vice Mayor Richardson encouraged staff to continue working on the remaining concerns to meet the environmental goals considering the cost factors and asked about the feedback received in the last AB 617 Community Steering Committee meeting in Carson, Wilmington and West Long Beach. Ms. Nakamura explained that at the August 2020 meeting comments were made on the need for the rule, timeframe and averaging time to meet the limits as well as requests to achieve maximum emission reductions.

Vice Mayor Richardson highlighted criticism that RECLAIM did not provide local benefits to the communities adjacent to the refineries. He requested updated outreach to these communities and inquired about industry's investments in control technologies over the past three years. Ms. Nakamura responded that 10 percent of the projects have been initiated and implemented to comply with the 2015

RECLAIM amendment. Vice Mayor Richardson added that cost and socioeconomic data from any implemented project could bring insight into the process.

Board Member Kracov acknowledged that PR 1109.1 is facing significant challenges regarding the technological and cost-effectiveness of the 2 ppm BARCT level, but the rule is headed in a good direction to achieve the limits required by the law.

Supervisor Rutherford stated the rulemaking process will require more time. She raised concerns regarding cost and expressed the need for a third-party independent analysis and a socioeconomic assessment. Mr. Nastri replied that the rulemaking process is following the approved timeline for Board approval consideration in June 2021. Staff is actively engaged in discussions with refineries can use existing datasets for the socioeconomic analysis. Staff will provide an update to the Stationary Source Committee in March 2021.

Senator Delgado acknowledged the fear of cost impacts to businesses and expressed support for rule progress to achieve improved air quality. She also emphasized the importance of spending more time on rulemaking.

Public comments were provided by the following:
Yvonne Watson, East Yard Communities for Environmental Justice
Alicia Rivera, Community Organizer for Wilmington
Chris Chavez, Communities for a Better Environment
Harvey Eder, Solar Power Coalition
Greg Busch, Marathon Petroleum Corporation
Byron Chan, Earthjustice,
Whitney Amaya, East Yard Communities for Environmental Justice
Al Sattler, Sierra Club
Florence Gharibian, Del Amo Action Committee
Michael Carroll, Latham & Watkins
Julia May, Communities for a Better Environment
David Pettit, Natural Resources Defense Council

Comments from community representatives included the need for facilities to implement BARCT by 2023 in accordance with AB617; that those limits are requirements and not an option; the failure to pass PR 1109.1 would be a violation of AB 617; new jobs would be created due to installation of new control technologies; and concerns with delayed NOx reduction projects, flexible and long delayed implementation schedules, long averaging times, higher NOx BARCT limits, and the inefficiency of RECLAIM over the past decade.

Mr. Busch offered to provide updated cost data since the initial cost data occurred when the limits were not defined, expressed concerns with data and methodology for the cost-effectiveness analysis including the incremental cost-effectiveness assessment not yet provided, and concerns that the new proposed 5 ppm NOx limit would not resolve the issues for units for which Selective Catalytic Reduction is not feasible. Mr. Nastri asked the refinery to submit updated cost data.

Board Member Kracov inquired whether the new proposed 5 ppm NOx limit would eliminate refineries' concern regarding the incremental cost-effectiveness assessment. Barbara Baird, Chief Deputy Counsel, referenced the California Health and Safety Code to clarify the incremental cost-effectiveness requirement.

Board Member Kracov acknowledged the briefings and letters from stakeholders and asked whether refineries were cooperative in meeting with staff and were providing adequate details. Ms. Nakamura replied that staff has been meeting and will continue to hold individual meetings with refineries.

Senator Delgado, Supervisor Kuehl, Vice Mayor Richardson, and Supervisor Rutherford left the meeting at [12:00 p.m.]

2. Summary of Proposed Amended Rule 1426 and Rule 1469

Dr. Jillian Wong, Planning and Rules Manager, presented a summary of Proposed Amended Rule 1426 – Emissions from Metal Finishing Operations and Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

Board Member Kracov stated that the cost numbers seemed reasonable. He asked how many facilities have fenceline monitoring, the cost and feasibility of conducting monitoring at facilities for hexavalent chromium and other toxic emissions. Ms. Nakamura responded that ambient air monitoring is expensive and the recently adopted Rule 1480 provides a process to require a facility to conduct ambient air monitoring after the South Coast AQMD has initiated monitoring.

Board Member Kracov asked how many of the more than 300 facilities are conducting monitoring. Ms. Nakamura explained that since rule adoption, no facilities have been required to conduct monitoring under Rule 1480. Board Member Kracov asked if monitoring was getting less expensive over time with technology improvements. Ms. Nakamura will get back to him with that information.

In response to a question from Board Member Kracov regarding enforcement, Mr. Nastri stated that he has confidence in the agency's enforcement team and the rigor that they approach enforcement. Board Member Kracov stated that he is hopeful

that both staff and industry are on board with the rule, which makes facilities located in low-income communities of color or close to sensitive receptors as clean as possible.

Ms. Gharibian commented that when DTSC calculates penalties for violations, they are based on the deviation from the requirements of the regulations and potential for harm because the potential for harm is greater when there are people living near a facility.

Ms. Gharibian and Ms. Robina Suwol, California Safe Schools, appreciated the 1,000-foot buffer for schools and residents and emphasized the importance of enforcement and oversight of these facilities.

Mr. Sattler asked if real-time fenceline monitors can be used. Mayor Pro Tem Benoit responded that fenceline monitoring can be quite expensive as it requires a technician to retrieve a sample and that materials need to be replaced. Mr. Nastri added that paper filters are not typically used, but rather glass deposition plates which have their limitations as well as other considerations for influences on the results at the fenceline. Mr. Nastri added that it is different from Rule 1180 monitoring, which does not focus on metals.

Mr. Jerry Desmond, Metal Finishing Association of Southern California, commented that they have been engaged with rule development and acknowledged that a number of issues have been addressed. He indicated that the current situation with the economy and COVID has impacted their industry. However, they understand the value of housekeeping and best management practices and that they are comfortable with this rulemaking. Board Member Kracov expressed appreciation for trade associations being active participants in the rulemaking process and for bringing their members up to speed on the requirements to help make the rule successful.

3. **Annual RECLAIM Audit Report for 2019 Compliance Year**
   The presentation was waived. There were no Committee member or public comments.

<u>WRITTEN REPORTS</u>:

4. **Monthly Update of Staff's Work with U.S. EPA and CARB on New Source Review Issues for the Transition of RECLAIM Facilities to a Command and Control Regulatory Program**
   The report was acknowledged by the Committee.

5. **Notice of Violation Penalty Summary**
   The report was acknowledged by the Committee.

OTHER MATTERS:

6. Other Business

There was no other business.

7. Public Comment Period

Mr. Eder expressed concerns about the time allotted for public comments, overlapping of Committee meetings, additional commenting time for environmental group and the COVID-19 pandemic.

8. Next Meeting Date

The next Stationary Source Committee meeting is scheduled for Friday, March 19, 2021 at 10:30 a.m.

Adjournment

The meeting was adjourned at 12:39 p.m.

Attachments

1. Attendance Record
2. Monthly Update of Staff's Work with U.S. EPA and CARB on New Source Review Issues for the Transition of RECLAIM Facilities to a Command and Control Regulatory Program
3. Notice of Violation Penalty Summary

ATTACHMENT 1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
STATIONARY SOURCE COMMITTEE
Attendance –February 19, 2021

Mayor Pro Tem Ben Benoit	South Coast AQMD Governing Board
Senator Vanessa Delgado (Ret.)	South Coast AQMD Governing Board
Board Member Gideon Kracov	South Coast AQMD Governing Board
Supervisor Sheila Kuehl	South Coast AQMD Governing Board
Vice Mayor Rex Richardson	South Coast AQMD Governing Board
Supervisor Janice Rutherford	South Coast AQMD Governing Board
Tricia Almiron	Board Consultant (Benoit)
Ruthanne Taylor Berger	Board Consultant (Benoit)
Thomas Gross	Board Consultant (Benoit)
Matthew Hamlett	Board Consultant (Richardson)
Loraine Lundquist	Board Consultant (Kuehl)
Debra Mendelsohn	Board Consultant (Rutherford)
Mark Taylor	Board Consultant (Rutherford)
Ross Zelen	Board Consultant (Kracov)
Whitney Amaya	East Yard Communities for Environmental Justice
Greg Busch	Marathon Petroleum Corporation
Michael Carroll	Latham & Watkins
Byron Chan	Earthjustice
Chris Chavez	Communities for a Better Environment
Curtis Coleman	Southern California Air Quality Alliance
Harvey Eder	Solar Power Coalition
Florence Gharibian	Del Amo Action Committee
Frances Keeler	CCEEB
Bill LaMarr	California Small Business Alliance
Rita Loof	RadTech International
Julia May	Communities for a Better Environment
Noel Muyco	Southern California Gas Co
David Petit	Natural Resources Defense Council
David Rothbart	SCAP
Patty Senecal	WSPA
Al Sattler	Sierra Club
Robina Suwol	California Safe Schools
Marshall Waller	Phillips 66 Company
Yvonne Watson	East Yard Communities for Environmental Justice
Scott Weaver	Ramboll
Peter Whittingham	Whittingham Public Affairs Advisors

ATTACHMENT 1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
STATIONARY SOURCE COMMITTEE
Attendance –February 19, 2021

Jason Aspell	South Coast AQMD staff
Derrick Alatorre	South Coast AQMD staff
Barbara Baird	South Coast AQMD staff
Naveen Berry	South Coast AQMD staff
Amir Dejbakhsh	South Coast AQMD staff
Jo Kay Ghosh	South Coast AQMD staff
Bayron Gilchrist	South Coast AQMD staff
Sheri Hanizavareh	South Coast AQMD staff
Anissa (Cessa) Heard-Johnson	South Coast AQMD staff
Mark Henninger	South Coast AQMD staff
Jason Low	South Coast AQMD staff
Terrence Mann	South Coast AQMD staff
Matt Miyasato	South Coast AQMD staff
Ron Moskowitz	South Coast AQMD staff
Susan Nakamura	South Coast AQMD staff
Wayne Nastri	South Coast AQMD staff
Sarah Rees	South Coast AQMD staff
Anthony Tang	South Coast AQMD staff
Jill Whynot	South Coast AQMD staff
Jillian Wong	South Coast AQMD staff
William Wong	South Coast AQMD staff
Paul Wright	South Coast AQMD staff
Victor Yip	South Coast AQMD staff

February 2021 Update on Work with U.S. EPA and California Air Resources Board on New Source Review Issues for the RECLAIM Transition

At the October 5, 2018 Board meeting, the Board directed staff to provide the Stationary Source Committee with a monthly update of staff's work with U.S. EPA regarding resolving NSR issues for the transition of facilities from RECLAIM to a command and control regulatory structure. The table below summarizes key activities with U.S. EPA and California Air Resources Board (CARB) since the last report.

Item	Discussion
Video Conference with U.S. EPA – January 14, 2021	• Reviewed presentations for the January RECLAIM and Regulation XIII Working Group Meetings
Video Conference with CARB – January 15, 2021	• Reviewed presentations for the January RECLAIM and Regulation XIII Working Group Meetings
RECLAIM and Regulation XIII (New Source Review) Working Group Meeting – January 21, 2021	• Provided updates on rulemakings for the RECLAIM transition • Discussed Capacity Utilization for quantification of offsets without records • Proposed a BACT exemption to address co-pollutant emissions for installation of air pollution controls to comply with NOx BARCT standards • Staff responded to stakeholder comment letters
Video Conference with U.S. EPA – January 25, 2021	• Discussed Startup, Shutdown, and Malfunction (SSM) guidance published by U.S. EPA on October 9, 2020
Video Conference with CARB – February 9, 2021	• Follow-up discussion on proposed BACT exemption for co-pollutant emission increases associated with air pollution control equipment installations to comply with NOx BARCT standards
Video Conference with U.S. EPA and CARB – February 10, 2021	• Reviewed presentations for the February RECLAIM and Regulation XIII Working Group Meetings
RECLAIM and Regulation XIII (New Source Review) Working Group Meeting – February 18, 2021	• Provided updates on rulemakings for the RECLAIM transition • Discussed proposed Rule 1304 amendments for co-pollutant BACT exemption • Proposed concepts to establish a Minor Source Bank and Major Source Bank instead of the previously proposed Large Source Bank •

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
General Counsel's Office

Settlement Penalty Report (01/01/2021 - 01/31/2021)

Penalties

Civil Settlement:	$17,550.00
Hearing Board Settlement:	$25,000.00
MSPAP Settlement:	$4,575.00
Total Cash Settlements:	$47,125.00
Fiscal Year through 01/31/2021 Cash Total :	$3,661,877.59

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbrs	Total Settlement
Civil						
109939	ARROW CONCRETE CUTTING CO, INC	203(a), 1403	01/06/2021	KER	P63776, P65927, P66416	$2,500.00
191119	E&B NATURAL RESOURCES MANAGEMENT CORP	203(b), 1148.1, 1173	01/06/2021	JL	P66850	$7,000.00
113873	MM WEST COVINA LLC	218, 3002	01/28/2021	SH	P66460	$3,750.00
15793	RIV CO, WASTE RESOURCES MGMT DIST, LAMB	203(b), 3002	01/26/2021	TB	P67425, P72906	$3,800.00
64093	S & C OIL CO INC	1148.1	01/26/2021	MR	P66542	$500.00
Total Civil Settlements : $17,550.00						
Hearing Board						
104234	SCAQMD v. Mission Foods	202, 203(b), 1153.1, 1303	01/14/2021	KCM	5400-4	$25,000.00
Total Hearing Board Settlements : $25,000.00						
MSPAP						
141435	CAL COAST INC	203(b), 461, H&S 41960.2	01/06/2021	GC	P68123	$1,500.00
173981	HOLLYWOOD RIVIERA CARWASH, INC., STEVE S	461	01/06/2021	GC	P68425	$300.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbrs	Total Settlement
172198	JACOS & CO INC/7-ELEVEN STORE 39682A	461	01/07/2021	TCF	P69858	$375.00
190671	KOUROSH YASHAR	1403, 40 CFR 61.145	01/07/2021	TCF	P67480, P67481	$1,600.00
176848	SOUTH CITY CIRCLE K AND 76	461	01/07/2021	TCF	P69031	$800.00
Total MSPAP Settlements : $4,575.00						

SOUTH COAST AQMD'S RULES AND REGULATIONS INDEX
FOR JANUARY 2021 PENALTY REPORT

REGULATION II - PERMITS

Rule 202	Temporary Permit to Operate
Rule 203	Permit to Operate
Rule 218	Continuous Emission Monitoring

REGULATION IV - PROHIBITIONS

Rule 461	Gasoline Transfer and Dispensing

REGULATION XI - SOURCE SPECIFIC STANDARDS

Rule 1148.1	Oil and Gas Production Wells
Rule 1153.1	Emissions of Oxides of Nitrogen from Commercial Food Ovens
Rule 1173	Fugitive Emissions of Volatile Organic Compounds

REGULATION XIII - NEW SOURCE REVIEW

Rule 1303	Requirements

REGULATION XIV - TOXICS

Rule 1403	Asbestos Emissions from Demolition/Renovation Activities

REGULATION XXX - TITLE V PERMITS

Rule 3002	Requirements for Title V Permits

CALIFORNIA HEALTH AND SAFETY CODE

41960.2	Gasoline Vapor Recovery

CODE OF FEDERAL REGULATIONS

40 CFR 61.145	Standard for demolition and renovation

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 27

REPORT: Technology Committee

SYNOPSIS: The Technology Committee held a meeting remotely on Friday, February 19, 2021. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Joe Buscaino, Chair
Technology Committee

MMM:psc

Committee Members

Present: Council Member Joe Buscaino/Chair
Supervisor Lisa Bartlett
Mayor Pro Tem Larry McCallon
Vice Mayor Rex Richardson

Absent: Board Member Gideon Kracov
Mayor Pro Tem Carlos Rodriguez

Call to Order

Chair Buscaino called the meeting to order at 12:00 p.m.

ACTION ITEMS:

1. **Amend Contracts for Enhanced Fleet Modernization Program and Execute Contract for Program Support**
   Since 2015, the South Coast AQMD has been implementing an Enhanced Fleet Modernization Program (EFMP), branded as Replace Your Ride. The program is administered with assistance from three contractors providing case management and remote sensing technical support. These actions are to amend contracts with three consultants to add funds for continued program support and execute a contract to provide income verification service for the program, using funds from the HEROS II Special Revenue Fund (56).

Mayor McCallon asked about the amount of NOx emission reduction and the cost-effectiveness of the program. Staff explained the EFMP is funded by the Greenhouse Gas Reduction Fund with a primary goal of reducing greenhouse gas emissions and serving low-income communities. NOx reduction is not a primary goal of this program. Staff will provide this information to Mayor McCallon.

Moved by Bartlett; seconded by McCallon; unanimously approved.

Ayes: Bartlett, Buscaino, McCallon
Noes: None
Absent: None

2. **Adopt Resolution Recognizing Funds for FY 2020-21 Carl Moyer Program and Issue Program Announcements for Carl Moyer and SOON Programs**
These actions are to adopt a Resolution recognizing up to $35 million in Carl Moyer Program grant funds from CARB with its terms and conditions for FY 2020-21 and issue Program Announcements for "Year 23" of the Carl Moyer Program and SOON Provision to solicit applications for eligible zero and low emitting on- and off-road vehicles and equipment, including marine vessels and locomotives, and infrastructure for near-zero and zero emission vehicles and equipment.

Vice Mayor Richardson arrived at 12:10 pm.

Supervisor Lisa Bartlett supported the staff proposal that 60 percent of the Carl Moyer Program funding be prioritized to disadvantaged and low-income communities while emphasizing the importance of allocating the remaining 40 percent for cost-effective projects and emission reduction benefits in our basin.

Mayor Larry McCallon asked about the source of AB 923 funding. Staff explained this funding is based on a $2 DMV motor vehicle registration fee and used for eligible Carl Moyer projects, including South Coast AQMD's required match funds to participate in the Carl Moyer Program.

Mayor Larry McCallon commented that Metrolink has been a recipient of AB 923 funding and has successfully deployed cleaner Tier 4 passenger trains in the region.

Ranji George, a member of the public, recommended more focus on reducing greenhouse gases and requested a broader definition of cost-effectiveness including short-, medium- and long-term benefits, while prioritizing fuel cell and sustainable battery technologies.

Moved by McCallon; seconded by Bartlett; unanimously approved.

Ayes: Bartlett, Buscaino, McCallon, Richardson
Noes: None
Absent: None

3. Amend Contract for Kore Infrastructure Project

In June 2020, the Board approved a contract amendment of Kore Infrastructure LLC (Kore) for a Renewable Natural Gas Commercial Field Test project, including construction of a pyrolysis system on Southern California Gas Company (SoCalGas) property in Los Angeles. The project is to test various biomass feedstocks for commercial production of renewable natural gas. This action is to amend the contract with Kore to extend the deadline to complete construction, commissioning and testing efforts by October 1, 2021.

Matt Gregori, Technology Development Manager for SoCalGas provided a presentation on their interest in promoting the development of hydrogen fuels and their continued interest in pyrolysis as a technology to increase the production of renewable hydrogen from biomass.

Mr. George inquired on the percent of our energy needs currently being met by renewables and inquired about staff's knowledge of pyrolysis projects in other countries and other areas.

Moved by Richardson; seconded by McCallon; unanimously approved.

Ayes: Bartlett, Buscaino, McCallon, Richardson
Noes: None
Absent: None

4. Execute Contracts for Hydrogen Infrastructure Projects and Fuel Cell Microgrid Study

Research and development in the area of hydrogen infrastructure and microgrids is important as fuel cell technology transitions from light- to medium- and heavy-duty vehicles. These actions are to support High Flow Bus Fueling Protocol Development with Frontier Energy, Inc. in an amount not to exceed $25,000, support California Heavy-Duty Hydrogen Infrastructure Research with National Renewable Energy Laboratory (NREL) in an amount not to exceed $25,000 and support California Hydrogen Systems Analysis with University of California, Davis (UC Davis) in an amount not to exceed $50,000 from the Clean Fuels Program Fund (31). The University of California, Irvine Advanced Power and Energy Program (UCI APEP) proposes a study to identify and quantify the steps required for wider deployment of microgrids using fuel cell technology. This action is also to execute a contract with UCI APEP to study fuel cell microgrid technology in an amount not to exceed $370,000 from the Clean Fuels Program Fund (31).

Vice Mayor Richardson noted that he does not have a financial interest or conflict of interest but is required to identify for the record that he is the Vice Mayor for the City of Long Beach which is involved in this item. He stated that he supports this program which will provide a bridge to zero emission technology.

Mayor McCallon emphasized the importance of microgrids for local zero-emission transportation, especially under Public Safety Power Shutoff events, to operate under islanding mode to secure continued operation of the transportation system. Local transit agencies and other critical facilities are such areas where demonstration of microgrids will be vital.

Supervisor Bartlett stated that microgrids are an important bridging technology to expand zero-emission hydrogen infrastructure. Since University of California, Irvine has been doing comprehensive studies for microgrids, this project will expand their previous work to provide strategic deployment of fuel cell microgrid systems.

Mr. George commented on the importance of hydrogen infrastructure deployment for light-duty vehicles as well as medium and heavy-duty vehicles. He stated that hydrogen fuel cells have less waste than battery technology.

Harvey Eder, Public Solar Power Coalition, commented that there is a need for low income, equitable solar power.

Moved by McCallon; seconded by Bartlett; unanimously approved.

Ayes: Bartlett, Buscaino, McCallon, Richardson
Noes: None
Absent: None

5. **Approve and Adopt Technology Advancement Office Clean Fuels Program 2020 Annual Report and 2021 Plan Update, Resolution and Membership Changes for Clean Fuels Advisory Group and Receive and File Updated Membership of Technology Advancement Advisory Group**
Each year by March 31, the South Coast AQMD must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year for the Clean Fuels Program. This action is to approve and adopt the Technology Advancement Clean Fuels Program Annual Report for 2020 and 2021 Plan Update and the Resolution finding that proposed projects do not duplicate any past or present programs. These actions are to also approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group and receive and file membership changes to the Technology Advancement Advisory Group.

Mr. Eder inquired about the Clean Fuels program and how the different types of supported technologies have developed and made an impact on the air quality in the

South Coast. Additionally, he commented that more funds should be spent on solar renewable energy due to climate concerns.

Mr. George expressed support for battery recycling and more solar energy to support EV infrastructure.

Moved by McCallon; seconded by Bartlett; unanimously approved.

Ayes: Bartlett, Buscaino, McCallon, Richardson
Noes: None
Absent: None

OTHER MATTERS:

6. Other Business

There was no other business.

7. Public Comment Period

Mr. Eder expressed concerns regarding technology and policy. Additionally, he expressed support for solar renewables.

Mr. George requested South Coast AQMD support of greenhouse gas reductions and concerns pertaining to batteries for zero emission technology and their eventual need for recycling.

Wayne Nastri, Executive Officer, announced that this will be Naveen Berry's last day due to his retirement and recognized Naveen for his more than 30 years of service. Chair Buscaino commented that Naveen has been a subject matter expert and has led with grace and passion in the field of moving toward embracing technologies and bringing key people to the table. Mayor McCallon commented that Naveen has served us well and will be missed. Naveen thanked management and the committee for their guidance and thanked staff for their support.

8. Next Meeting Date

The next regular Technology Committee meeting is scheduled for Friday, March 19, 2021 at noon.

Adjournment

The meeting adjourned at 1:15 p.m.

Attachment

Attendance Record

ATTACHMENT

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
TECHNOLOGY COMMITTEE MEETING
Attendance Record – February 19, 2021

Supervisor Lisa Bartlett	South Coast AQMD Board Member
Council Member Joe Buscaino	South Coast AQMD Board Member
Mayor Pro Tem Larry McCallon	South Coast AQMD Board Member
Vice Mayor Rex Richardson	South Coast AQMD Board Member
Council Member Michael Cacciotti	South Coast AQMD Board Member (observer)
James Dinwiddie	Board Consultant (Bartlett)
Jacob Haik	Board Consultant (Buscaino)
Matthew Hamlett	Board Consultant (Richardson)
Matt Holder	Board Consultant (Rodriguez)
Ross Zelen	Board Consultant (Kracov)
Mark Abramowitz	Public Member
Ramine Cromartie	Public Member
Harvey Eder	Public Member
Ranji George	Public Member
Matt Gregori	SoCalGas
Ihshan Hsuyen	Public Member
Dan McGivney	Public Member
Fred Minassian	Public Member
Henry Zhang	Public Member
Phil Barroca	South Coast AQMD Staff
Naveen Berry	South Coast AQMD Staff
Penny Shaw Cedillo	South Coast AQMD Staff
Bayron Gilchrist	South Coast AQMD Staff
Sheri Hanizavareh	South Coast AQMD Staff
Anissa (Cessa) Heard-Johnson	South Coast AQMD Staff
Darren Ha	South Coast AQMD Staff
Seungbum Ha	South Coast AQMD Staff
Mark Henninger	South Coast AQMD Staff
Joseph Impullitti	South Coast AQMD Staff
Rhea Lam	South Coast AQMD Staff
Tom Lee	South Coast AQMD Staff
Jason Low	South Coast AQMD Staff

Lisa Mirisola ..... South Coast AQMD Staff
Matt Miyasato ..... South Coast AQMD Staff
Wayne Nastri..... South Coast AQMD Staff
Arnold Peneda..... South Coast AQMD Staff
Angelica Reyes..... South Coast AQMD Staff
Walter Shen..... South Coast AQMD Staff
Veera Tyagi..... South Coast AQMD Staff
Alejandra Vega..... South Coast AQMD Staff
Donna Vernon ..... South Coast AQMD Staff
Michelle White..... South Coast AQMD Staff
Vicki White ..... South Coast AQMD Staff
Jill Whynot..... South Coast AQMD Staff
Paul Wright ..... South Coast AQMD Staff
Alyssa Yan ..... South Coast AQMD Staff

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 28

REPORT: Mobile Source Air Pollution Reduction Review Committee

SYNOPSIS: The Mobile Source Air Pollution Reduction Review Committee held a meeting remotely on Thursday, February 18, 2020. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Ben Benoit
South Coast AQMD Representative
to MSRC

MMM:CR:av

FYs 2016-18 and 2018-21 Work Programs

Update on MSRC's Regional Goods Movement Program and Hydrogen Infrastructure Partnership Program

Staff provided an update on MSRC's Regional Goods Movement and Hydrogen Infrastructure Partnership Programs.

There are four categories under the Regional Goods Movement Program.

- Last Mile Freight Delivery, a partnership was established with SCAG and the program is essentially ready for launch.
- "Maritime Ports" Goods Movement, the MSRC partnered with the Regional Zero-Emission Truck Collaborative on a project which should result in 100 zero emission drayage trucks and supporting infrastructure.
- Near-Zero Emission Truck Cooperative, the MSRC partnered with South Coast AQMD on the Market Acceleration Program and the Voucher Incentive Program (VIP) "Plus Up." There was slow uptake for the Plus Up Program. In March, the MSRC's Technical Advisory Committee will review a potential midcourse adjustment for possible MSRC action.
- "Inland Ports" Warehouse Distribution Centers, recent RFPs received a good response and proposals are currently undergoing evaluation.

Staff reported that the MSRC's Hydrogen Infrastructure Partnership Program will close on April 9, 2021 and is expected to be oversubscribed.

Contract Modification Requests

The MSRC considered five contract modification requests and took the following actions:

1. City of Los Angeles, Contract #ML14018, which provides $810,000 for 27 Heavy-Duty Natural Gas Vehicles, a nine-month no-cost term extension;
2. City of Fontana, Contract #ML16047, which provides $500,000 to enhance an existing Class I Bikeway, a one-year no-cost term extension;
3. City of Eastvale, Contract #ML18064, which provides $80,400 for two light-duty and one medium-duty zero emission vehicles and to install electric vehicle charging infrastructure, a two-year no-cost term extension;
4. City of Wildomar, Contract #ML18137 which provides $50,000 to install bicycle lanes, a one-year no-cost term extension; and
5. SCAG, Contract #MS18002, which provides $2,500,000 for the Regional Active Transportation Partnership Program, an eight-month no-cost term extension.

Contracts Administrator's Report

The MSRC's AB 2766 Contracts Administrator's report provides a written status report on all open contracts from FY 2007-08 to the present. The Contracts Administrator's Report for December 3, 2020 through January 27, 2021 is attached (Attachment 1).

Attachment

December 3, 2020 through January 27, 2021 Contracts Administrator's Report

MSRC Agenda Item No. 1

DATE:	February 18, 2021
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, 2020 to January 27, 2021.
RECOMMENDATION:	Receive and file report
WORK PROGRAM IMPACT:	None

Contract Execution Status

2016-18 Work Program

On July 8, 2016, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On October 7, 2016, the SCAQMD Governing Board approved three awards under the Event Center Transportation Program and one award for a Regional Active Transportation Partnership Program. These contracts are executed.

On January 6, 2017, the SCAQMD Governing Board approved an award for development, hosting and maintenance of a new MSRC website. This contract is executed.

On April 7, 2017, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On June 2, 2017, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On July 7, 2017, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On September 1, 2017, the SCAQMD Governing Board approved one award under the Event Center Transportation Program and one award under the Natural Gas Infrastructure Program. These contracts are executed.

On October 6, 2017, the SCAQMD Governing Board approved two awards under the Event Center Transportation Program and one award under the Natural Gas Infrastructure Program. These contracts are executed.

On December 1, 2017, the SCAQMD Governing Board approved sole source awards for a Hydrogen Infrastructure Partnership Program, for a Southern California Future Communities Partnership Program, and for electric vehicle charging infrastructure planning analysis. These contracts are executed. The MSRC has replaced the award to the California Energy Commission with a Program Opportunity Notice for the Hydrogen Infrastructure Partnership Program.

On February 2, 2018, the SCAQMD Governing Board approved one award under the Event Center Transportation Program, two awards under the Natural Gas Infrastructure Program, four awards under the Local Government Partnership Program, and two awards under the County Transportation Commission Partnership Program. These contracts are executed.

On March 2, 2018, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program, two awards under the Natural Gas Infrastructure Program, and one award under the Local Government Partnership Program. These contracts are executed.

On April 6, 2018, the SCAQMD Governing Board approved one award under the Natural Gas Infrastructure Program and eight awards under the Local Government Partnership Program. These contracts are executed.

On May 4, 2018, the SCAQMD Governing Board approved twenty-seven awards under the Local Government Partnership Program and one award under the County Transportation Commission Partnership Program. These contracts are executed.

On June 1, 2018, the SCAQMD Governing Board approved six awards under the Local Government Partnership Program, one award under the Natural Gas Infrastructure Program, and one award under the County Transportation Commission Partnership Program. These contracts are executed.

On July 6, 2018, the SCAQMD Governing Board approved nine awards under the Local Government Partnership Program. These contracts are executed.

On September 7, 2018, the SCAQMD Governing Board approved nineteen awards under the Local Government Partnership Program, three awards under the County Transportation Commission Partnership Program, one award under the Major Event Center Transportation Program, and twenty awards under the Natural Gas Infrastructure Program. These contracts are executed.

On October 5, 2018, the SCAQMD Governing Board approved forty-eight awards under the Local Government Partnership Program and one award under the Hydrogen Infrastructure Program. These contracts are with the prospective contractor for signature or executed.

On November 2, 2018, the SCAQMD Governing Board approved two awards under the Local Government Partnership Program. These contracts are executed.

2018-21 Work Program

On April 5, 2019, the SCAQMD Governing Board approved an award under the Major Event Center Transportation Program. This contract is executed.

On September 6, 2019, the SCAQMD Governing Board approved an award under the Major Event Center Transportation Program. This contract is executed.

On December 6, 2019, the SCAQMD Governing Board approved an award under the Major Event Center Transportation Program. This contract is executed.

On September 4, 2020, the SCAQMD Governing Board approved an award under the Last Mile component of the MSRC's Regional Goods Movement Program. This contract is under development.

Work Program Status

Contract Status Reports for work program years with open and/or pending contracts are attached.

FY 2010-11 Work Program Contracts

One contract from this work program year is open; and 6 are in "Open/Complete" status. One contract closed during this period: City of Santa Ana, Contract #ML11041 – Purchase Seven LPG Heavy-Duty Vehicles and Retrofit Six Heavy-Duty Diesel Vehicles.

FY 2010-11 Invoices Paid

No invoices were paid during this period.

FY 2011-12 Work Program Contracts

6 contracts from this work program year are open, and 12 are in "Open/Complete" status.

FY 2011-12 Invoices Paid

No invoices were paid during this period.

FYs 2012-14 Work Program Contracts

15 contracts from this work program year are open, and 27 are in "Open/Complete" status. 5 contracts closed during this period: Penske Truck Leasing, Contract #MS14037 – Vehicle Maintenance Facility Modifications; Riverside County Waste Management, Contract #ML14031 – Purchase 3 Heavy-Duty CNG Vehicles; City of Claremont, Contract #ML14064 – Purchase 2 Heavy-Duty Natural Gas Vehicles; TIMCO CNG Fund, Contract #MS14044 – Install New Public Access CNG Station in Santa Ana; TIMCO CNG Fund, Contract #MS14045 – Install New Public Access CNG Station in Inglewood.

FYs 2012-14 Invoices Paid

One invoice in the amount of $30,000.00 was paid during this period.

FYs 2014-16 Work Program Contracts

38 contracts from this work program year are open, and 30 are in "Open/Complete" status. One contract closed during this period: Riverside County Transportation Authority, Contract #MS16124 – Extended Freeway Service Patrols.

FYs 2014-16 Invoices Paid
2 invoices totaling $1,055,000.00 were paid during this period.

FYs 2016-18 Work Program Contracts
111 contracts from this work program year are open, and 34 are in "Open/Complete" status. 2 contracts closed during this period: City of Desert Hot Springs, Contract #ML18022 – Traffic Signal Synchronization; City of Lomita, Contract #ML18126 – Install Bicycle Racks and Lanes. Due to lack of response, negotiations were terminated with: City of Montebello for a Natural Gas Infrastructure Program award of $70,408 to expand their existing CNG infrastructure; and City of Inglewood for a Local Government Partnership Program award of $146,000 to purchase 4 light-duty zero emission vehicles and 4 heavy-duty near-zero emission vehicles and install electric vehicle charging infrastructure. Additionally, City of South El Monte declined their $20,000 award to implement a bike share program. These funds were reverted to the AB 2766 Discretionary Fund.

6 invoices totaling $724,103.41 were paid during this period.

FYs 2018-21 Work Program Contracts
4 contracts from this work program year are open.

One invoice in the amount of $5,974.65 was paid during this period.

Administrative Scope Changes
No administrative scope changes were initiated during the period from December 3, 2020 to January 27, 2021.

Attachments
- FY 2007-08 through FYs 2018-21 (except FY 2009-10) Contract Status Reports

AB2766 Discretionary Fund Program Invoices

December 30, 2020 to January 27, 2021

Contract Admin.	MSRC Chair	MSRC Liaison	Finance	Contract #	Contractor	Invoice #	Amount
2012-2014 Work Program							
1/14/2021	1/14/2021	1/14/2021	1/19/2021	ML14018	City of Los Angeles Dept of General Services	2	$30,000.00
Total: $30,000.00							
2014-2016 Work Program							
1/14/2021	1/14/2021	1/19/2021	1/19/2021	ML16042	City of San Dimas	4460-Final	$55,000.00
Total: $55,000.00							
2016-2018 Work Program							
1/27/2021	2/2/2021	2/9/2021	2/9/2021	ML18060	County of Los Angeles Internal Services Depart	MSRC002 RI	$14,945.35
1/14/2021	1/14/2021	1/19/2021	1/19/2021	MS18003	Geographics	)-22254/222	$746.00
1/14/2021	1/14/2021	1/14/2021	1/21/2021	ML18136	City of Orange	0125497	$10,000.00
1/21/2021	2/2/2021	2/9/2021	2/9/2021	ML18060	County of Los Angeles Internal Services Depart	21MSRC003	$312,712.96
1/21/2021	2/2/2021	2/9/2021	2/9/2021	ML18081	City of Beaumont	020-75/FINA	$31,870.00
Total: $370,274.31							

Total This Period: $455,274.31

Clean Transportation Funding Database

FYs 2007-08 Through 2018-21 AB2766 Contract Status Report

2/11/2021

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2007-2008 Contracts									
Declined/Cancelled 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
ML08080	City of Irvine	5/1/2009	5/31/2015		$50,000.00	$0.00	Two Heavy-Duty Nat. Gas Vehicles	$50,000.00	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
Total: 17									
Closed Contracts									
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
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
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
ML08028	City of Santa Monica	9/11/2009	9/10/2016	5/10/2019	$600,000.00	$200,000.00	24 CNG Heavy-Duty Vehicles	$400,000.00	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
ML08030	City of Azusa	5/14/2010	3/13/2016		$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	No
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
ML08036	City of South Pasadena	5/12/2009	7/11/2013		$169,421.00	$169,421.00	New CNG Station	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML08037	City of Glendale	5/20/2009	5/19/2015		$325,000.00	$325,000.00	13 CNG 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
ML08039	City of Rancho Palos Verdes	6/5/2009	8/4/2015		$50,000.00	$50,000.00	2 LPG Transit Buses	$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
ML08044	City of Chino	3/19/2009	3/18/2015		$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	Yes
ML08045	City of Santa Clarita	2/20/2009	6/19/2010		$3,213.00	$3,150.00	14 Vehicles (Diagnostic)	$63.00	Yes
ML08046	City of Paramount	2/20/2009	2/19/2015		$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	Yes
ML08047	City of Culver City Transportation De	5/12/2009	8/11/2015		$150,000.00	$150,000.00	6 CNG Heavy-Duty Vehicles	$0.00	Yes
ML08048	City of Santa Clarita	2/20/2009	6/19/2015		$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$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
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
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
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	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
MS08007	United Parcel Service West Region	12/10/2008	10/9/2014	4/9/2019	$300,000.00	$270,000.00	10 H.D. Nat. Gas Vehicles	$30,000.00	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
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
MS08013	United Parcel Service West Region	12/10/2008	10/9/2014	3/9/2019	$480,000.00	$432,000.00	12 H.D. Nat. Gas Yard Tractors	$48,000.00	No
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
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.	1/23/2009	12/31/2010	9/30/2011	$227,198.00	$80,351.34	Rideshare 2 School Program	$146,846.66	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
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
MS08058	Clean Energy Fuels Corp.	11/26/2009	3/25/2016	3/25/2017	$400,000.00	$400,000.00	New CNG Station - Ontario Airport	$0.00	Yes
MS08061	Clean Energy Fuels Corp.	12/4/2009	3/3/2015		$400,000.00	$400,000.00	New CNG Station - L.A.-La Cienega	$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
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

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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
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
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	$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
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
Total: 59									
Closed/Incomplete 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
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
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: 3									
Open/Complete Contracts									
ML08043	City of Desert Hot Springs	9/25/2009	3/24/2016	3/24/2021	$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	Yes
Total: 1									

FY 2008-2009 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Declined/Cancelled 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
Total: 10									
Closed Contracts									
ML09007	City of Rancho Cucamonga	2/26/2010	4/25/2012		$117,500.00	$62,452.57	Maintenance Facility Modification	$55,047.43	Yes
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
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
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
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
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
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
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
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
ML09031	City of Los Angeles Dept of General	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
ML09033	City of Beverly Hills	3/4/2011	5/3/2017	1/3/2019	$550,000.00	$550,000.00	10 Nat. Gas Heavy-Duty Vehicles & CNG St	$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

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML09035	City of Fullerton	6/17/2010	6/16/2017	6/16/2018	$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
ML09047	Los Angeles County Department of P	8/13/2014	8/12/2015	11/12/2015	$400,000.00	$272,924.53	Maintenance Facility Modifications	$127,075.47	No
Total: 30									
Open/Complete Contracts									
ML09036	City of Long Beach Fleet Services B	5/7/2010	5/6/2017	11/6/2022	$875,000.00	$875,000.00	Purchase 35 Natural Gas Refuse Trucks	$0.00	Yes
Total: 1									

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2010-2011 Contracts									
Open Contracts									
ML11029	City of Santa Ana	9/7/2012	3/6/2020	3/6/2023	$262,500.00	$75,000.00	Expansion of Existing CNG Station, Install N	$187,500.00	No
Total: 1									
Declined/Cancelled Contracts									
ML11038	City of Santa Monica	5/18/2012	7/17/2018		$400,000.00	$0.00	Maintenance Facility Modifications	$400,000.00	No
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
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: 22									
Closed Contracts									
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
ML11020	City of Indio	2/1/2013	3/31/2019	9/30/2020	$15,000.00	$9,749.50	Retrofit one H.D. Vehicles w/DECS, repower	$5,250.50	Yes
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
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
ML11027	City of Los Angeles, Dept. of General	5/4/2012	7/3/2015	1/3/2016	$300,000.00	$300,000.00	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?
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
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
ML11032	City of Gardena	3/2/2012	9/1/2018	10/1/2020	$102,500.00	$102,500.00	Purchase Heavy-Duty CNG Vehicle, Install S	$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 Dept of General	5/4/2012	1/3/2019		$630,000.00	$630,000.00	Purchase 21 H.D. CNG Vehicles	$0.00	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
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
ML11041	City of Santa Ana	9/7/2012	11/6/2018	1/6/2021	$265,000.00	$244,651.86	Purchase 7 LPG H.D. Vehicles, Retrofit 6 H.	$20,348.14	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
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
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
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
MS11019	City of Corona	11/29/2012	4/28/2020		$225,000.00	$225,000.00	Expansion of Existing CNG Station	$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
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
MS11056	Better World Group Advisors	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
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
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
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	Yes
MS11065	Temecula Valley Unified School Distr	8/11/2012	1/10/2019		$50,000.00	$48,539.62	Expansion of Existing CNG Station	$1,460.38	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

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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	$175,000.00	New Limited Access CNG Station	$0.00	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
MS11079	Bear Valley Unified School District	2/5/2013	10/4/2019		$175,000.00	$175,000.00	New Limited Access CNG Station	$0.00	Yes
MS11080	Southern California Regional Rail Aut	4/6/2012	7/31/2012		$26,000.00	$26,000.00	Metrolink Service to Auto Club Speedway	$0.00	Yes
MS11086	DCL America Inc.	6/7/2013	10/6/2016		$500,000.00	$359,076.96	Retrofit Eight H.D. Off-Road Vehicles Under	$140,923.04	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
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	$78,750.00	Retrofit 17 H.D. Off-Road Vehicles Under Sh	$311,771.00	No
Total: 55									
Closed/Incomplete 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
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
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
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
Total: 5									
Open/Complete Contracts									
ML11024	County of Los Angeles, Dept of Publi	12/5/2014	6/4/2022		$90,000.00	$90,000.00	Purchase 3 Nat. Gas H.D. Vehicles	$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
ML11036	City of Riverside	1/27/2012	1/26/2019	3/26/2021	$670,000.00	$670,000.00	Install New CNG Station, Purchase 9 H.D. N	$0.00	Yes
ML11040	City of South Pasadena	5/4/2012	1/3/2019	1/3/2022	$30,000.00	$30,000.00	Purchase 1 Nat. Gas H.D. Vehicle	$0.00	Yes
ML11045	City of Newport Beach	2/3/2012	8/2/2018	3/2/2021	$30,000.00	$30,000.00	Purchase 1 Nat. Gas H.D. Vehicle	$0.00	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
Total: 6									

FY 2011-2012 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
ML12014	City of Santa Ana	11/8/2013	8/7/2020	8/7/2021	$338,000.00	$4,709.00	9 H.D. Nat. Gas & LPG Trucks, EV Charging	$333,291.00	No
ML12043	City of Hemet	6/24/2013	9/23/2019	11/23/2021	$30,000.00	$30,000.00	One Heavy-Duty Nat. Gas Vehicles	$0.00	No
ML12045	City of Baldwin Park DPW	2/14/2014	12/13/2020	6/13/2025	$400,000.00	$0.00	Install New CNG Station	$400,000.00	No
ML12057	City of Coachella	8/28/2013	8/27/2019	1/27/2022	$57,456.00	$57,456.00	Purchase One Nat. Gas H.D. Vehicle/Street	$0.00	No
ML12090	City of Palm Springs	10/9/2015	10/8/2021	9/8/2025	$21,163.00	$0.00	EV Charging Infrastructure	$21,163.00	No
ML12091	City of Bellflower	10/5/2018	10/4/2019	6/30/2021	$100,000.00	$0.00	EV Charging Infrastructure	$100,000.00	No
Total: 6									
Declined/Cancelled Contracts									
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
ML12038	City of Long Beach Public Works				$26,000.00	$0.00	Electric Vehicle Charging Infrastructure	$26,000.00	No
ML12040	City of Duarte				$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
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
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
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
MS12030	Complete Landscape Care, Inc.				$150,000.00	$0.00	Purchase 6 Medium-Heavy Duty Vehicles	$150,000.00	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
MS12070	Valley Music Travel/CID Entertainme				$99,000.00	$0.00	Implement Shuttle Service to Coachella Mus	$99,000.00	No
Total: 12									
Closed Contracts									
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
ML12020	City of Los Angeles Dept of General	9/27/2012	3/26/2019	3/26/2020	$450,000.00	$450,000.00	15 H.D. Nat. Gas Vehicles	$0.00	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
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
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
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
ML12041	City of Anaheim Public Utilities Depa	4/4/2014	11/3/2015	11/3/2017	$68,977.00	$38,742.16	EV Charging Infrastructure	$30,234.84	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
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

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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
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
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
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	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
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
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
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
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
MS12024	Southern California Gas Company	6/13/2013	12/12/2019	11/12/2020	$150,000.00	$150,000.00	Construct New Public-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
MS12031	Final Assembly, Inc.	11/2/2012	11/1/2018		$50,000.00	$32,446.00	Purchase 2 Medium-Heavy Duty Vehicles	$17,554.00	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/VSP	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
MS12059	Orange County Transportation Autho	2/28/2013	12/27/2014		$75,000.00	$75,000.00	Maintenance Facilities Modifications	$0.00	Yes
MS12060	City of Santa Monica	4/4/2014	8/3/2017	8/3/2019	$500,000.00	$434,202.57	Implement Westside Bikeshare Program	$65,797.43	No
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
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
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 Aut	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
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

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS12076	City of Ontario, Housing & Municipal	3/8/2013	4/7/2015		$75,000.00	$75,000.00	Maintenance Facilities Modification	$0.00	Yes
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	Yes
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	Yes
MS12085	Bear Valley Unified School District	4/25/2013	6/24/2014		$75,000.00	$75,000.00	Maintenance Facility Modifications	$0.00	Yes
MS12086	SuperShuttle International, Inc.	3/26/2013	3/25/2019		$225,000.00	$225,000.00	Purchase 23 Medium-Heavy Duty Vehicles	$0.00	Yes
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	$18,496.50	Implement Rideshare Incentives Program	$106,503.50	Yes
MS12089	Riverside County Transportation Co	10/18/2013	9/17/2015		$249,136.00	$105,747.48	Implement Rideshare Incentives Program	$143,388.52	No
MS12Hom	Mansfield Gas Equipment Systems				$296,000.00	$0.00	Home Refueling Apparatus Incentive Progra	$296,000.00	No
Total: 58									
Closed/Incomplete Contracts									
ML12051	City of Bellflower	2/7/2014	2/6/2016	5/6/2018	$100,000.00	$0.00	EV Charging 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
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
MS12084	Airport Mobil Inc.	12/6/2013	5/5/2020		$150,000.00	$0.00	Install New CNG Infrastructure	$150,000.00	No
Total: 4									
Open/Complete Contracts									
ML12015	City of Fullerton	4/25/2013	11/24/2020	11/24/2021	$40,000.00	$40,000.00	HD CNG Vehicle, Expand CNG Station	$0.00	Yes
ML12017	City of Los Angeles, Bureau of Sanit	6/26/2013	5/25/2020	11/25/2021	$950,000.00	$950,000.00	32 H.D. Nat. Gas Vehicles	$0.00	Yes
ML12018	City of West Covina	10/18/2013	10/17/2020	8/17/2023	$300,000.00	$300,000.00	Expansion of Existing CNG Station	$0.00	Yes
ML12046	City of Irvine	8/11/2013	3/10/2021		$30,000.00	$30,000.00	One Heavy-Duty Nat. Gas Vehicle	$0.00	Yes
MS12008	Bonita Unified School District	7/12/2013	12/11/2019	4/11/2021	$175,000.00	$175,000.00	Construct New Limited-Access CNG Station	$0.00	Yes
MS12011	Southern California Gas Company	6/14/2013	6/13/2019	5/28/2021	$150,000.00	$150,000.00	Construct New Public-Access CNG Station -	$0.00	Yes
MS12033	Mike Diamond/Phace Management	12/22/2012	12/21/2018	6/21/2021	$148,900.00	$148,900.00	Purchase 20 Medium-Heavy Duty Vehicles	$0.00	No
MS12034	Ware Disposal Company, Inc.	11/2/2012	11/1/2018	5/1/2022	$133,070.00	$133,070.00	Purchase 8 Medium-Heavy Duty Vehicles	$0.00	No
MS12075	CR&R Incorporated	7/27/2013	1/26/2021	1/26/2022	$100,000.00	$100,000.00	Expansion of Existing CNG Infrastructure	$0.00	No
MS12080	City of Pasadena	11/8/2013	8/7/2020	2/7/2022	$225,000.00	$225,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
MS12082	City of Los Angeles, Bureau of Sanit	11/20/2013	2/19/2021	2/19/2023	$175,000.00	$175,000.00	Install New CNG Infrastructure	$0.00	Yes
MS12083	Brea Olinda Unified School District	7/30/2015	2/29/2024		$59,454.00	$59,454.00	Install New CNG Infrastructure	$0.00	Yes
Total: 12									

FY 2012-2014 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
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
ML14018	City of Los Angeles Dept of General	3/6/2015	9/5/2021	5/5/2025	$810,000.00	$750,000.00	Purchase 27 H.D. Nat. Gas Vehicles	$60,000.00	No
ML14021	Riverside County Regional Park and	7/24/2014	12/23/2016	9/30/2024	$250,000.00	$0.00	Bicycle Trail Improvements	$250,000.00	No
ML14023	County of Los Angeles Department o	10/2/2015	9/1/2017	3/1/2021	$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	9/1/2021	$230,000.00	$0.00	Maintenance Fac. Modifications-Baldwin Par	$230,000.00	No
ML14027	County of Los Angeles Dept of Publi	10/2/2015	5/1/2023	12/1/2025	$492,000.00	$0.00	Construct New CNG Station in Canyon Coun	$492,000.00	No
ML14030	County of Los Angeles Internal Servi	1/9/2015	3/8/2018	7/30/2021	$425,000.00	$25,000.00	Bicycle Racks, Outreach & Education	$400,000.00	No
ML14069	City of Beaumont	3/3/2017	3/2/2025		$200,000.00	$0.00	Construct New CNG Infrastructure	$200,000.00	No
ML14072	City of Cathedral City	8/13/2014	1/12/2021	7/12/2022	$41,000.00	$35,089.03	Install Bicycle Racks & Implement Bicycle E	$5,910.97	No
ML14097	County of Los Angeles Internal Servi	9/6/2019	9/5/2020	9/5/2021	$104,400.00	$0.00	Electric Vehicle Charging Infrastructure	$104,400.00	No
MS14057	Los Angeles County MTA	11/7/2014	10/6/2019	10/6/2023	$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	3/4/2022	$1,250,000.00	$490,000.00	Implement Various Signal Synchronization P	$760,000.00	No
MS14072	San Bernardino County Transportatio	3/27/2015	3/26/2018	3/26/2022	$1,250,000.00	$887,566.17	Implement Various Signal Synchronization P	$362,433.83	No
MS14079	Waste Resources, Inc.	9/14/2016	8/13/2022	2/13/2024	$100,000.00	$0.00	New Limited Access CNG Station	$100,000.00	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
Total: 15									
Declined/Cancelled Contracts									
ML14063	City of Hawthorne				$32,000.00	$0.00	Expansion of Existng CNG Infrastructure	$32,000.00	No
ML14068	City of South Pasadena	9/12/2014	10/11/2015	1/11/2020	$10,183.00	$0.00	Electric Vehicle Charging Infrastructure	$10,183.00	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
MS14038	Penske Truck Leasing Co., L.P.				$75,000.00	$0.00	Vehicle Maint. Fac. Modifications - Fontana	$75,000.00	No
MS14043	City of Anaheim				$175,000.00	$0.00	Expansion of Existing 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
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
MS14091	Serv-Wel Disposal				$100,000.00	$0.00	New Limited-Access CNG Infrastructure	$100,000.00	No
Total: 10									
Closed Contracts									
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
ML14014	City of Torrance	9/5/2014	12/4/2019		$56,000.00	$56,000.00	EV Charging Infrastructure	$0.00	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 Pub	8/13/2014	1/12/2018		$150,000.00	$0.00	San Gabriel BikeTrail Underpass Improveme	$150,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML14029	City of Irvine	7/11/2014	6/10/2017		$90,500.00	$71,056.78	Bicycle Trail Improvements	$19,443.22	Yes
ML14031	Riverside County Waste Manageme	6/13/2014	12/12/2020		$90,000.00	$90,000.00	Purchase 3 H.D. CNG Vehicles	$0.00	Yes
ML14051	City of Brea	9/5/2014	1/4/2017	7/4/2018	$450,000.00	$450,000.00	Installation of Bicycle Trail	$0.00	Yes
ML14054	City of Torrance	11/14/2014	4/13/2017	7/13/2017	$350,000.00	$319,908.80	Upgrade Maintenance Facility	$30,091.20	Yes
ML14055	City of Highland	10/10/2014	3/9/2018	3/9/2019	$500,000.00	$489,385.24	Bicycle Lanes and Outreach	$10,614.76	Yes
ML14056	City of Redlands	9/5/2014	5/4/2016	5/4/2018	$125,000.00	$125,000.00	Bicycle Lanes	$0.00	Yes
ML14064	City of Claremont	7/11/2014	7/10/2020	1/10/2021	$60,000.00	$60,000.00	Purchase Two Heavy-Duty Nat. Gas Vehicle	$0.00	Yes
ML14065	City of Orange	9/5/2014	8/4/2015		$10,000.00	$10,000.00	Electric Vehicle Charging Infrastructure	$0.00	Yes
ML14070	City of Rancho Cucamonga	9/3/2016	12/2/2018		$365,245.00	$326,922.25	Bicycle Trail Improvements	$38,322.75	Yes
ML14071	City of Manhattan Beach	1/9/2015	11/8/2018		$22,485.00	$22,485.00	Electric Vehicle Charging Infrastructure	$0.00	Yes
ML14094	City of Yucaipa	6/9/2017	6/8/2018		$84,795.00	$84,795.00	Installation of Bicycle Lanes	$0.00	Yes
ML14095	City of South Pasadena	1/10/2019	7/9/2019		$142,096.00	$134,182.09	Bicycle Trail Improvements	$7,913.91	Yes
ML14096	County of Los Angeles Dept of Pub	5/3/2019	12/2/2019	3/2/2020	$74,186.00	$74,186.00	San Gabriel BikeTrail Underpass Improveme	$0.00	Yes
MS14001	Los Angeles County MTA	3/6/2015	4/30/2015		$1,216,637.00	$1,199,512.68	Clean Fuel Transit Service to Dodger Stadiu	$17,124.32	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
MS14037	Penske Truck Leasing Co., L.P.	4/7/2017	6/6/2020		$75,000.00	$75,000.00	Vehicle Maint. Fac. Modifications - Carson	$0.00	Yes
MS14039	Waste Management Collection and	7/10/2015	4/9/2016		$75,000.00	$75,000.00	Vehicle Maint. Fac. Modifications - Irvine	$0.00	Yes
MS14040	Waste Management Collection and	7/10/2015	4/9/2016		$75,000.00	$75,000.00	Vehicle Maint. Fac. Modifications - Santa An	$0.00	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
MS14047	Southern California Regional Rail Aut	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
MS14052	Arcadia Unified School District	6/13/2014	10/12/2020		$78,000.00	$78,000.00	Expansion of an Existing CNG Fueling Statio	$0.00	Yes
MS14058	Orange County Transportation Autho	11/7/2014	4/6/2016	4/6/2017	$1,250,000.00	$1,250,000.00	Implement Various Signal Synchronization P	$0.00	Yes
MS14073	Anaheim Transportation Network	1/9/2015	4/30/2017		$221,312.00	$221,312.00	Anaheim Resort Circulator Service	$0.00	Yes
MS14087	Orange County Transportation Autho	8/14/2015	4/30/2016		$239,645.00	$195,377.88	Implement Special Metrolink Service to Ang	$44,267.12	Yes
MS14088	Southern California Regional Rail Aut	5/7/2015	9/30/2015		$79,660.00	$66,351.44	Special Metrolink Service to Autoclub Speed	$13,308.56	Yes
MS14089	Top Shelf Consulting, LLC	1/18/2017	8/4/2016	3/31/2017	$200,000.00	$200,000.00	Enhanced Fleet Modernization Program	$0.00	Yes
Total: 39									
Closed/Incomplete Contracts									
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

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML14060	County of Los Angeles Internal Servi	10/6/2017	1/5/2019		$104,400.00	$0.00	Electric Vehicle Charging Infrastructure	$104,400.00	No
ML14066	City of South Pasadena	9/12/2014	7/11/2016	2/11/2018	$142,096.00	$0.00	Bicycle Trail Improvements	$142,096.00	No
ML14093	County of Los Angeles Dept of Pub	8/14/2015	1/13/2019		$150,000.00	$0.00	San Gabriel BikeTrail Underpass Improveme	$150,000.00	No
MS14092	West Covina Unified School District	9/3/2016	12/2/2022		$124,000.00	$0.00	Expansion of Existing CNG Infrastructure	$124,000.00	No
Total: 5									
Open/Complete Contracts									
ML14013	City of Los Angeles, Bureau of Sanit	10/7/2016	2/6/2025		$400,000.00	$400,000.00	Purchase 14 H.D. Nat. Gas Vehicles	$0.00	Yes
ML14016	City of Anaheim	4/3/2015	9/2/2021		$380,000.00	$380,000.00	Purchase 2 H.D. Vehicles, Expansion of Exi	$0.00	Yes
ML14019	City of Corona Public Works	12/5/2014	6/4/2020	3/6/2023	$111,518.00	$111,517.18	EV Charging, Bicycle Racks, Bicycle Locker	$0.82	Yes
ML14022	County of Los Angeles Department o	10/2/2015	5/1/2022		$270,000.00	$270,000.00	Purchase 9 H.D. Nat. Gas Vehicles	$0.00	Yes
ML14025	County of Los Angeles Dept of Publi	10/2/2015	7/1/2018	7/1/2024	$300,000.00	$300,000.00	Construct New CNG Station in Malibu	$0.00	Yes
ML14026	County of Los Angeles Dept of Publi	10/2/2015	5/1/2023	5/1/2024	$300,000.00	$300,000.00	Construct New CNG Station in Castaic	$0.00	Yes
ML14028	City of Fullerton	9/5/2014	1/4/2022		$126,950.00	$126,950.00	Expansion of Exisiting CNG Infrastructure	$0.00	Yes
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
ML14033	City of Irvine	7/11/2014	2/10/2021	2/10/2022	$60,000.00	$60,000.00	Purchase 2 H.D. CNG Vehicles	$0.00	Yes
ML14034	City of Lake Elsinore	9/5/2014	5/4/2021		$56,700.00	$56,700.00	EV Charging Stations	$0.00	Yes
ML14049	City of Moreno Valley	7/11/2014	3/10/2021		$105,000.00	$101,976.09	One HD Nat Gas Vehicle, EV Charging, Bicy	$3,023.91	Yes
ML14061	City of La Habra	3/11/2016	3/10/2022		$41,600.00	$41,270.49	Purchase Two Heavy-Duty Nat. Gas Vehicle	$329.51	Yes
ML14062	City of San Fernando	3/27/2015	5/26/2021	10/31/2023	$325,679.00	$325,679.00	Expand Existing CNG Fueling Station	$0.00	Yes
ML14067	City of Duarte	12/4/2015	1/3/2023	6/3/2024	$60,000.00	$60,000.00	Purchase Two Electric Buses	$0.00	Yes
MS14041	USA Waste of California, Inc.	9/4/2015	10/3/2021		$175,000.00	$175,000.00	Limited-Access CNG Station, Vehicle Maint.	$0.00	Yes
MS14042	Grand Central Recycling & Transfer	6/6/2014	9/5/2021		$150,000.00	$150,000.00	Expansion of Existing CNG Station	$0.00	Yes
MS14046	Ontario CNG Station Inc.	5/15/2014	5/14/2020	11/14/2021	$150,000.00	$150,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
MS14053	Upland Unified School District	1/9/2015	7/8/2021		$175,000.00	$175,000.00	Expansion of Existing CNG Infrastructure	$0.00	No
MS14074	Midway City Sanitary District	1/9/2015	3/8/2021		$250,000.00	$250,000.00	Limited-Access CNG Station & Facility Modif	$0.00	Yes
MS14075	Fullerton Joint Union High School Di	7/22/2016	11/21/2023		$300,000.00	$293,442.00	Expansion of Existing CNG Infrastructure/Ma	$6,558.00	Yes
MS14076	Rialto Unified School District	6/17/2015	2/16/2022	6/25/2023	$225,000.00	$225,000.00	New Public Access CNG Station	$0.00	Yes
MS14077	County Sanitation Districts of L.A. Co	3/6/2015	5/5/2021		$175,000.00	$175,000.00	New Limited Access CNG Station	$0.00	Yes
MS14080	CR&R Incorporated	6/1/2015	8/31/2021	8/31/2022	$200,000.00	$200,000.00	Expansion of Existing CNG Infrastructure/Ma	$0.00	No
MS14081	CR&R Incorporated	6/1/2015	5/30/2021		$175,000.00	$100,000.00	Expansion of Existing CNG Infrastructure/Ma	$75,000.00	No
MS14082	Grand Central Recycling & Transfer	12/4/2015	3/3/2023	3/3/2024	$150,000.00	$150,000.00	Construct New Public Access CNG Station	$0.00	Yes
MS14084	US Air Conditioning Distributors	5/7/2015	9/6/2021		$100,000.00	$100,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
MS14090	City of Monterey Park	5/7/2015	5/6/2021		$225,000.00	$225,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
Total: 27									

FY 2014-2016 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
ML16006	City of Cathedral City	4/27/2016	4/26/2022		$25,000.00	$0.00	Bicycle Outreach	$25,000.00	No
ML16007	City of Culver City Transportation De	10/6/2015	4/5/2023		$246,000.00	$210,000.00	Purchase 7 H.D. Nat. Gas Vehicles, EV Cha	$36,000.00	No
ML16008	City of Pomona	9/20/2016	11/19/2022	5/19/2025	$60,000.00	$0.00	Purchase 3 Medium-Duty and 1 Heavy-Duty	$60,000.00	No
ML16010	City of Fullerton	10/7/2016	4/6/2023	4/6/2024	$78,222.00	$27,896.71	Install EV Charging Stations	$50,325.29	No
ML16017	City of Long Beach	2/5/2016	8/4/2023	1/4/2026	$1,445,400.00	$1,375,400.00	Purchase 50 Medium-Duty, 17 H.D. Nat. Ga	$70,000.00	No
ML16018	City of Hermosa Beach	10/7/2016	1/6/2023		$29,520.00	$23,768.44	Purchase 2 M.D. Nat. Gas Vehicles, Bicycle	$5,751.56	No
ML16022	Los Angeles Department of Water an	5/5/2017	3/4/2024	9/4/2025	$360,000.00	$0.00	Purchase 12 H.D. Nat. Gas Vehicles	$360,000.00	No
ML16025	City of South Pasadena	6/22/2016	4/21/2023	10/21/2024	$160,000.00	$0.00	Purchase H.D. Nat. Gas Vehicle, Expand Exi	$160,000.00	No
ML16032	City of Azusa	9/9/2016	4/8/2019	4/8/2021	$474,925.00	$0.00	Implement a "Complete Streets" Pedestrian	$474,925.00	No
ML16038	City of Palm Springs	4/1/2016	7/31/2022	9/30/2022	$170,000.00	$0.00	Install Bicycle Lanes & Purchase 2 Heavy-D	$170,000.00	No
ML16039	City of Torrance Transit Department	1/6/2017	9/5/2022	9/5/2023	$32,000.00	$0.00	Install EV Charging Infrastructure	$32,000.00	No
ML16040	City of Eastvale	1/6/2017	7/5/2022	7/5/2026	$110,000.00	$0.00	Install EV Charging Infrastructure	$110,000.00	No
ML16041	City of Moreno Valley	9/3/2016	1/2/2021	1/2/2024	$20,000.00	$0.00	Install EV Charging Infrastructure	$20,000.00	No
ML16042	City of San Dimas	4/1/2016	12/31/2019	12/31/2021	$55,000.00	$55,000.00	Install EV Charging Infrastructure	$0.00	No
ML16046	City of El Monte	4/1/2016	5/31/2021	5/31/2023	$20,160.00	$0.00	Install EV Charging Infrastructure	$20,160.00	No
ML16047	City of Fontana	1/6/2017	8/5/2019	8/5/2021	$500,000.00	$0.00	Enhance an Existing Class 1 Bikeway	$500,000.00	No
ML16048	City of Placentia	3/26/2016	5/25/2021	6/25/2022	$90,000.00	$18,655.00	Install a Bicycle Locker and EV Charging Infr	$71,345.00	No
ML16052	City of Rancho Cucamonga	9/3/2016	11/2/2019	3/31/2021	$315,576.00	$0.00	Install Two Class 1 Bikeways	$315,576.00	No
ML16053	City of Claremont	3/11/2016	7/10/2018	12/10/2020	$498,750.00	$0.00	Implement a "Complete Streets" Pedestrian	$498,750.00	No
ML16057	City of Yucaipa	4/27/2016	1/26/2019	1/26/2022	$380,000.00	$0.00	Implement a "Complete Streets" Pedestrian	$380,000.00	No
ML16070	City of Beverly Hills	2/21/2017	6/20/2023		$90,000.00	$0.00	Purchase 3 H.D. Nat. Gas Vehicles	$90,000.00	No
ML16071	City of Highland	5/5/2017	1/4/2020	1/4/2022	$264,500.00	$0.00	Implement a "Complete Streets" Pedestrian	$264,500.00	No
ML16075	City of San Fernando	10/27/2016	2/26/2019	2/26/2022	$354,000.00	$0.00	Install a Class 1 Bikeway	$354,000.00	No
ML16077	City of Rialto	5/3/2018	10/2/2021	2/2/2026	$463,216.00	$158,105.51	Pedestrian Access Improvements, Bicycle L	$305,110.49	No
ML16083	City of El Monte	4/1/2016	4/30/2021	4/30/2023	$57,210.00	$25,375.60	Install EV Charging Infrastructure	$31,834.40	No
MS16086	San Bernardino County Transportatio	9/3/2016	10/2/2021		$800,625.00	$530,127.84	Freeway Service Patrols	$270,497.16	No
MS16094	Riverside County Transportation Co	1/25/2017	1/24/2022		$1,909,241.00	$0.00	MetroLink First Mile/Last Mile Mobility Strate	$1,909,241.00	No
MS16096	San Bernardino County Transportatio	10/27/2016	12/26/2019	6/30/2021	$450,000.00	$0.00	EV Charging Infrastructure	$450,000.00	No
MS16110	City of Riverside	10/6/2017	2/5/2025	2/5/2026	$300,000.00	$71,250.00	Expansion of Existing CNG Station and Main	$228,750.00	No
MS16115	City of Santa Monica	4/14/2017	7/13/2025		$870,000.00	$427,500.00	Repower 58 Transit Buses	$442,500.00	No
MS16117	Omnitrans	4/21/2017	6/20/2023		$175,000.00	$175,000.00	Expansion of Existing CNG Infrastructure	$0.00	No
MS16118	Omnitrans	4/21/2017	6/20/2023		$175,000.00	$175,000.00	Expansion of Existing CNG Infrastructure	$0.00	No
MS16119	Omnitrans	4/21/2017	8/20/2022		$150,000.00	$0.00	New Public Access CNG Station	$150,000.00	No
MS16120	Omnitrans	4/7/2017	5/6/2025		$945,000.00	$0.00	Repower 63 Existing Buses	$945,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS16121	Long Beach Transit	11/3/2017	4/2/2024	11/30/2026	$600,000.00	$14,250.00	Repower 39 and Purchase 1 New Transit Bu	$585,750.00	No
MS16123	Orange County Transportation Autho	12/7/2018	11/6/2023		$91,760.00	$0.00	Install La Habra Union Pacific Bikeway	$91,760.00	No
Total: 36									
Pending Execution Contracts									
MS16127	Los Angeles County MTA				$2,500,000.00	$0.00	Expansion of the Willowbrook/Rosa Parks Tr	$2,500,000.00	No
Total: 1									
Declined/Cancelled Contracts									
ML16014	City of Dana Point				$153,818.00	$0.00	Extend an Existing Class 1 Bikeway	$153,818.00	No
ML16065	City of Temple City				$500,000.00	$0.00	Implement a "Complete Streets" Pedestrian	$500,000.00	No
ML16067	City of South El Monte				$73,329.00	$0.00	Implement an "Open Streets" Event	$73,329.00	No
ML16074	City of La Verne	7/22/2016	1/21/2023		$365,000.00	$0.00	Install CNG Fueling Station	$365,000.00	No
MS16043	LBA Realty Company LLC				$100,000.00	$0.00	Install Limited-Access CNG Station	$100,000.00	No
MS16080	Riverside County Transportation Co				$1,200,000.00	$0.00	Passenger Rail Service for Coachella and St	$1,200,000.00	No
MS16098	Long Beach Transit				$198,957.00	$0.00	Provide Special Bus Service to Stub Hub Ce	$198,957.00	No
MS16104	City of Perris				$175,000.00	$0.00	Expansion of Existing CNG Infrastructure	$175,000.00	No
MS16106	City of Lawndale	3/1/2019	11/30/2025		$175,000.00	$0.00	Expansion of Existing CNG Infrastructure	$175,000.00	No
MS16107	Athens Services				$100,000.00	$0.00	Construct a Limited-Access CNG Station	$100,000.00	No
MS16108	VNG 5703 Gage Avenue, LLC				$150,000.00	$0.00	Construct Public-Access CNG Station in Bell	$150,000.00	No
MS16109	Sanitation Districts of Los Angeles C				$275,000.00	$0.00	Expansion of an Existing L/CNG Station	$275,000.00	No
MS16111	VNG 925 Lakeview Avenue, LLC				$150,000.00	$0.00	Construct Public Access CNG Station in Pla	$150,000.00	No
Total: 13									
Closed Contracts									
ML16009	City of Fountain Valley	10/6/2015	2/5/2018	5/5/2019	$46,100.00	$46,100.00	Install EV Charging Infrastructure	$0.00	Yes
ML16015	City of Yorba Linda	3/4/2016	11/3/2017		$85,000.00	$85,000.00	Install Bicycle Lanes	$0.00	No
ML16020	City of Pomona	4/1/2016	2/1/2018	8/1/2018	$440,000.00	$440,000.00	Install Road Surface Bicycle Detection Syste	$0.00	Yes
ML16026	City of Downey	5/6/2016	9/5/2017		$40,000.00	$40,000.00	Install EV Charging Infrastructure	$0.00	No
ML16028	City of Azusa	9/9/2016	4/8/2018		$25,000.00	$25,000.00	Enhance Existing Class 1 Bikeway	$0.00	Yes
ML16031	City of Cathedral City	12/19/2015	2/18/2017		$25,000.00	$25,000.00	Street Sweeping in Coachella Valley	$0.00	Yes
ML16033	Coachella Valley Association of Gov	4/27/2016	4/26/2018		$250,000.00	$250,000.00	Street Sweeping Operations in Coachella Va	$0.00	Yes
ML16034	City of Riverside	3/11/2016	10/10/2018	7/10/2020	$500,000.00	$500,000.00	Implement a "Complete Streets" Pedestrian	$0.00	Yes
ML16035	City of Wildomar	4/1/2016	11/1/2017		$500,000.00	$0.00	Install Bicycle Lanes	$500,000.00	No
ML16036	City of Brea	3/4/2016	12/3/2018		$500,000.00	$500,000.00	Install a Class 1 Bikeway	$0.00	Yes
ML16045	City of Anaheim	6/22/2016	8/21/2019		$275,000.00	$255,595.08	Maintenance Facility Modifications	$19,404.92	Yes
ML16049	City of Buena Park	4/1/2016	11/30/2018		$429,262.00	$429,262.00	Installation of a Class 1 Bikeway	$0.00	Yes
ML16051	City of South Pasadena	2/12/2016	1/11/2017	12/11/2017	$320,000.00	$258,691.25	Implement "Open Streets" Event with Variou	$61,308.75	Yes
ML16054	City of Yucaipa	3/26/2016	7/26/2018	10/25/2019	$120,000.00	$120,000.00	Implement a "Complete Streets" Pedestrian	$0.00	Yes
ML16060	City of Cudahy	2/5/2016	10/4/2017		$73,910.00	$62,480.00	Implement an "Open Streets" Event	$11,430.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML16061	City of Murrieta	4/27/2016	1/26/2020		$11,642.00	$9,398.36	Installation of EV Charging Infrastructure	$2,243.64	Yes
ML16062	City of Colton	6/3/2016	7/2/2020		$21,003.82	$21,003.82	Installation of EV Charging Infrastructure	$0.00	Yes
ML16064	County of Orange, OC Parks	2/21/2017	10/20/2018		$204,073.00	$157,632.73	Implement "Open Streets" Events with Vario	$46,440.27	Yes
ML16066	City of Long Beach Public Works	1/13/2017	9/12/2018		$75,050.00	$63,763.62	Implement an "Open Streets" Event	$11,286.38	Yes
ML16068	Riverside County Dept of Public Heal	12/2/2016	8/1/2018		$171,648.00	$171,648.00	Implement "Open Streets" Events with Vario	$0.00	Yes
ML16073	City of Long Beach Public Works	1/13/2017	7/12/2017		$50,000.00	$50,000.00	Implement an "Open Streets" Event	$0.00	Yes
ML16078	City of Moreno Valley	5/6/2016	11/5/2017	5/5/2018	$32,800.00	$31,604.72	Install Bicycle Infrastructure & Implement Bi	$1,195.28	Yes
ML16079	City of Yucaipa	4/1/2016	3/31/2020		$5,000.00	$5,000.00	Purchase Electric Lawnmower	$0.00	Yes
ML16122	City of Wildomar	6/8/2018	6/7/2019		$500,000.00	$500,000.00	Install Bicycle Lanes	$0.00	Yes
ML16126	City of Palm Springs	7/31/2019	7/30/2020	10/30/2020	$22,000.00	$19,279.82	Install Bicycle Racks, and Implement Bicycle	$2,720.18	Yes
MS16001	Los Angeles County MTA	4/1/2016	4/30/2017		$1,350,000.00	$1,332,039.84	Clean Fuel Transit Service to Dodger Stadiu	$17,960.16	Yes
MS16002	Orange County Transportation Autho	10/6/2015	5/31/2016		$722,266.00	$703,860.99	Clean Fuel Transit Service to Orange Count	$18,405.01	Yes
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
MS16004	Mineral LLC	9/4/2015	7/3/2017	1/3/2018	$27,690.00	$9,300.00	Design, Develop, Host and Maintain MSRC	$18,390.00	Yes
MS16029	Orange County Transportation Autho	1/12/2018	6/11/2020		$836,413.00	$567,501.06	TCM Partnership Program - OC Bikeways	$268,911.94	Yes
MS16030	Better World Group Advisors	12/19/2015	12/31/2017	12/31/2019	$271,619.00	$245,355.43	Programmic Outreach Services to the MSR	$26,263.57	Yes
MS16084	Transit Systems Unlimited, Inc.	5/6/2016	2/28/2018		$565,600.00	$396,930.00	Implement Special Shuttle Service from Uni	$168,670.00	No
MS16085	Southern California Regional Rail Aut	3/11/2016	9/30/2016		$78,033.00	$64,285.44	Special MetroLink Service to Autoclub Spee	$13,747.56	No
MS16089	Orange County Transportation Autho	7/8/2016	4/30/2017		$128,500.00	$128,500.00	Implement Special Bus Service to Angel Sta	$0.00	Yes
MS16092	San Bernardino County Transportatio	2/3/2017	1/2/2019		$242,937.00	$242,016.53	Implement a Series of "Open Streets" Event	$920.47	Yes
MS16093	Orange County Transportation Autho	9/3/2016	3/2/2018	9/2/2018	$1,553,657.00	$1,499,575.85	Implement a Mobile Ticketing System	$54,081.15	Yes
MS16095	Orange County Transportation Autho	7/22/2016	5/31/2017		$694,645.00	$672,864.35	Implement Special Bus Service to Orange C	$21,780.65	Yes
MS16099	Foothill Transit	3/3/2017	3/31/2017		$50,000.00	$50,000.00	Provide Special Bus Service to the Los Ange	$0.00	Yes
MS16100	Southern California Regional Rail Aut	5/5/2017	9/30/2017		$80,455.00	$66,169.43	Provide Metrolink Service to Autoclub Speed	$14,285.57	Yes
MS16124	Riverside County Transportation Co	12/14/2018	12/14/2019	5/14/2020	$253,239.00	$246,856.41	Extended Freeway Service Patrols	$6,382.59	Yes
MS16125	San Bernardino County Transportatio	9/20/2019	11/19/2020		$1,000,000.00	$1,000,000.00	Traffic Signal Synchronization Projects	$0.00	Yes
Total: 41									
Closed/Incomplete Contracts									
ML16005	City of Palm Springs	3/4/2016	10/3/2017		$40,000.00	$0.00	Install Bicycle Racks, and Implement Bicycle	$40,000.00	No
MS16082	Riverside County Transportation Co	9/3/2016	8/2/2018		$590,759.00	$337,519.71	Extended Freeway Service Patrols	$253,239.29	No
MS16090	Los Angeles County MTA	10/27/2016	4/26/2020	10/26/2020	$2,500,000.00	$0.00	Expansion of the Willowbrook/Rosa Parks Tr	$2,500,000.00	No
MS16091	San Bernardino County Transportatio	10/7/2016	11/6/2018		$1,000,000.00	$0.00	Traffic Signal Synchronization Projects	$1,000,000.00	No
Total: 4									
Open/Complete Contracts									
ML16011	City of Claremont	10/6/2015	6/5/2022		$90,000.00	$90,000.00	Purchase 3 Heavy-Duty Nat. Gas Vehicles	$0.00	Yes
ML16012	City of Carson	1/15/2016	10/14/2022		$60,000.00	$60,000.00	Purchase 2 Heavy-Duty Nat. Gas Vehicles	$0.00	Yes
ML16013	City of Monterey Park	12/4/2015	7/3/2022	7/3/2024	$90,000.00	$90,000.00	Purchase 3 Heavy-Duty Nat. Gas Vehicles	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML16016	City of Los Angeles Dept of General	2/5/2016	12/4/2022		$630,000.00	$630,000.00	Purchase 21 Heavy-Duty Nat. Gas Vehicles	$0.00	Yes
ML16019	City of Los Angeles, Dept of General	1/25/2017	3/24/2023		$102,955.00	$102,955.00	Install EV Charging Infrastructure	$0.00	Yes
ML16021	City of Santa Clarita	10/7/2016	6/6/2024		$49,400.00	$49,399.00	Install EV Charging Infrastructure	$1.00	Yes
ML16023	City of Banning	12/11/2015	12/10/2021		$30,000.00	$30,000.00	Purchase 1 H.D. Nat. Gas Vehicle	$0.00	Yes
ML16024	City of Azusa	4/27/2016	2/26/2022		$30,000.00	$30,000.00	Purchase 1 H.D. Nat. Gas Vehicle	$0.00	Yes
ML16027	City of Whittier	1/8/2016	11/7/2022		$30,000.00	$30,000.00	Purchase 1 H.D. Nat. Gas Vehicle	$0.00	Yes
ML16037	City of Rancho Cucamonga	2/5/2016	11/4/2022		$30,000.00	$30,000.00	Purchase One Heavy-Duty Natural Gas Vehi	$0.00	Yes
ML16050	City of Westminster	5/6/2016	7/5/2020	5/5/2022	$115,000.00	$93,925.19	Installation of EV Charging Infrastructure	$21,074.81	No
ML16055	City of Ontario	5/6/2016	5/5/2022		$270,000.00	$270,000.00	Purchase Nine Heavy-Duty Natural-Gas Veh	$0.00	Yes
ML16056	City of Ontario	3/23/2016	9/22/2020	9/22/2021	$106,565.00	$106,565.00	Expansion of an Existing CNG Station	$0.00	Yes
ML16058	Los Angeles County Department of P	10/7/2016	4/6/2024		$371,898.00	$371,898.00	Purchase 11 H.D. Nat. Gas Vehicles and Ins	$0.00	Yes
ML16059	City of Burbank	4/1/2016	2/28/2022		$180,000.00	$180,000.00	Purchase 6 H.D. Nat. Gas Vehicles	$0.00	No
ML16063	City of Glendora	3/4/2016	4/3/2022		$30,000.00	$30,000.00	Purchase One H.D. Nat. Gas Vehicle	$0.00	Yes
ML16069	City of West Covina	3/10/2017	6/9/2021		$54,199.00	$54,199.00	Installation of EV Charging Infrastructure	$0.00	Yes
ML16072	City of Palm Desert	3/4/2016	1/4/2020	1/3/2022	$56,000.00	$56,000.00	Installation of EV Charging Infrastructure	$0.00	Yes
ML16076	City of San Fernando	2/21/2017	8/20/2021		$43,993.88	$43,993.88	Install EV Charging Infrastructure	$0.00	Yes
MS16081	EDCO Disposal Corporation	3/4/2016	10/3/2022		$150,000.00	$150,000.00	Expansion of Existing Public Access CNG St	$0.00	Yes
MS16087	Burrtec Waste & Recycling Services,	7/8/2016	3/7/2023		$100,000.00	$100,000.00	Construct New Limited-Access CNG Station	$0.00	Yes
MS16088	Transit Systems Unlimited, Inc.	5/12/2017	1/11/2023		$17,000.00	$17,000.00	Expansion of Existing CNG Station	$0.00	Yes
MS16097	Walnut Valley Unified School District	10/7/2016	11/6/2022		$250,000.00	$250,000.00	Expand CNG Station & Modify Maintenance	$0.00	Yes
MS16102	Nasa Services, Inc.	2/21/2017	4/20/2023		$100,000.00	$100,000.00	Construct a Limited-Access CNG Station	$0.00	No
MS16103	Arrow Services, Inc.	2/3/2017	4/2/2023		$100,000.00	$100,000.00	Construct a Limited-Access CNG Station	$0.00	Yes
MS16105	Huntington Beach Union High School	3/3/2017	7/2/2024		$175,000.00	$175,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
MS16112	Orange County Transportation Autho	4/14/2017	3/13/2024		$1,470,000.00	$1,470,000.00	Repower Up to 98 Transit Buses	$0.00	No
MS16113	Los Angeles County MTA	5/12/2017	4/11/2024		$1,875,000.00	$1,875,000.00	Repower Up to 125 Transit Buses	$0.00	Yes
MS16114	City of Norwalk	3/3/2017	6/2/2024		$45,000.00	$32,170.00	Purchase 3 Transit Buses	$12,830.00	Yes
MS16116	Riverside Transit Agency	3/3/2017	1/2/2023		$10,000.00	$9,793.00	Purchase One Transit Bus	$207.00	No

Total: 30

FY 2016-2018 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
ML18020	City of Colton	5/3/2018	4/2/2024		$67,881.00	$35,667.00	Purchase One Medium-Duty and One Heavy	$32,214.00	No
ML18030	City of Grand Terrace	6/28/2018	3/27/2022	3/27/2025	$45,000.00	$0.00	Install EVSE	$45,000.00	No
ML18031	City of Diamond Bar	9/7/2018	11/6/2025		$73,930.00	$0.00	Install EVSE, Purchase up to 2-LD Vehicles	$73,930.00	No
ML18034	City of Calabasas	6/8/2018	3/7/2022	3/7/2023	$50,000.00	$0.00	Install EVSE	$50,000.00	No
ML18036	City of Indian Wells	8/8/2018	5/7/2023		$50,000.00	$0.00	Install EV Charging Station	$50,000.00	No
ML18038	City of Anaheim	10/5/2018	5/4/2025	5/4/2026	$221,500.00	$147,883.27	Purchase 5 Light-Duty ZEVs and Install EVS	$73,616.73	No
ML18039	City of Redlands	6/28/2018	7/27/2024	1/27/2025	$87,000.00	$0.00	Purchase 1 Medium/Heavy-Duty ZEV and In	$87,000.00	No
ML18041	City of West Hollywood	8/8/2018	12/7/2023		$50,000.00	$0.00	Install EV Charging Infrastructure	$50,000.00	No
ML18043	City of Yorba Linda	9/7/2018	12/6/2023		$87,990.00	$0.00	Install EV Charging Infrastructure	$87,990.00	No
ML18044	City of Malibu	8/8/2018	10/7/2022	10/7/2023	$50,000.00	$0.00	Install EV Charging Infrastructure	$50,000.00	No
ML18046	City of Santa Ana	11/9/2018	7/8/2026		$385,000.00	$0.00	Purchase 6 Light-Duty ZEVs, 9 Heavy-Duty	$385,000.00	No
ML18047	City of Whittier	8/8/2018	4/7/2026		$113,910.00	$45,564.00	Purchase 5 Heavy-Duty Near-Zero Emission	$68,346.00	No
ML18050	City of Irvine	9/7/2018	8/6/2028		$330,490.00	$0.00	Purchase 1 Medium/Heavy-Duty ZEV and In	$330,490.00	No
ML18051	City of Rancho Cucamonga	3/1/2019	10/31/2025		$227,040.00	$0.00	Purchase 9 Light-Duty ZEVs, 2 Med-Duty ZE	$227,040.00	No
ML18053	City of Paramount	9/7/2018	3/6/2023		$64,675.00	$0.00	Install EV Charging Infrastructure	$64,675.00	No
ML18055	City of Long Beach Fleet Services B	11/29/2018	11/28/2026		$622,220.00	$140,291.13	Install EV Charging Stations	$481,928.87	No
ML18056	City of Chino	3/29/2019	9/28/2023		$103,868.00	$103,868.00	Install EV Charging Infrastructure	$0.00	No
ML18057	City of Carson	10/5/2018	7/4/2023		$106,250.00	$50,000.00	Purchase 5 Zero-Emission Vehicles and Infr	$56,250.00	No
ML18058	City of Perris	10/12/2018	11/11/2024		$94,624.00	$0.00	Purchase 1 Med. H.D. ZEV and EV Chargin	$94,624.00	No
ML18059	City of Glendale Water & Power	2/1/2019	7/31/2026		$260,500.00	$0.00	Install Electric Vehicle Charging Infrastructur	$260,500.00	No
ML18060	County of Los Angeles Internal Servi	10/5/2018	8/4/2026		$1,367,610.00	$599,306.31	Purchase 29 Light-Duty Zero Emission Vehi	$768,303.69	No
ML18063	City of Riverside	6/7/2019	1/6/2027		$383,610.00	$0.00	Expand Existing CNG Stations	$383,610.00	No
ML18064	City of Eastvale	11/29/2018	4/28/2026		$80,400.00	$28,457.43	Purchase 2 Light-Duty, One Medium-Duty. Z	$51,942.57	No
ML18067	City of Pico Rivera	9/7/2018	11/6/2022		$83,500.00	$0.00	Instal EVSE	$83,500.00	No
ML18068	City of Mission Viejo	7/31/2019	6/30/2027		$125,690.00	$10,000.00	Purchase 2 Light-Duty ZEVs, Install EVSE &	$115,690.00	No
ML18069	City of Torrance	3/1/2019	7/31/2027		$187,400.00	$100,000.00	Purchase 4 Heavy-Duty Near-Zero Emission	$87,400.00	No
ML18078	County of Riverside	10/5/2018	10/4/2028		$425,000.00	$200,000.00	Purchase 17 Heavy-Duty Vehicles	$225,000.00	No
ML18080	City of Santa Monica	1/10/2019	12/9/2023		$121,500.00	$14,748.62	Install EV Charging Stations	$106,751.38	No
ML18081	City of Beaumont	10/5/2018	10/4/2022	10/4/2025	$31,870.00	$31,870.00	EV Charging Infrastructure	$0.00	Yes
ML18082	City of Los Angeles Bureau of Sanita	8/30/2019	8/29/2028		$900,000.00	$0.00	Purchase Medium-Duty Vehicles and EV Ch	$900,000.00	No
ML18083	City of San Fernando	11/2/2018	11/1/2022		$20,000.00	$0.00	Implement Traffic Signal Synchronization	$20,000.00	No
ML18084	City of South El Monte	10/18/2019	9/17/2023	9/17/2024	$30,000.00	$0.00	EV Charging Infrastructure	$30,000.00	No
ML18087	City of Murrieta	3/29/2019	3/28/2025		$143,520.00	$143,520.00	Install Four EV Charging Stations	$0.00	No
ML18088	City of Big Bear Lake	11/29/2018	8/28/2020	8/28/2021	$50,000.00	$0.00	Install Bicycle Trail	$50,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML18089	City of Glendora	7/19/2019	4/18/2025	4/18/2026	$50,760.00	$0.00	Purchase a medium-duty ZEV	$50,760.00	No
ML18090	City of Santa Clarita	5/9/2019	2/8/2023		$122,000.00	$0.00	Install Nine EV Charging Stations	$122,000.00	No
ML18091	City of Temecula	1/19/2019	7/18/2023		$141,000.00	$0.00	Install Sixteen EV Charging Stations	$141,000.00	No
ML18092	City of South Pasadena	2/1/2019	1/31/2025		$50,000.00	$0.00	Procure Two Light-Duty ZEVs and Install EV	$50,000.00	No
ML18093	City of Monterey Park	2/1/2019	2/28/2026		$25,000.00	$0.00	Purchase Heavy-Duty Near-ZEV	$25,000.00	No
ML18094	City of Laguna Woods	7/12/2019	12/11/2024		$50,000.00	$0.00	Install Two EV Charging Stations	$50,000.00	No
ML18095	City of Gardena	11/9/2018	12/8/2024		$25,000.00	$25,000.00	Purchase Heavy-Duty Near-ZEV	$0.00	No
ML18096	City of Highland	12/13/2019	8/12/2024		$70,210.00	$9,918.84	Purchase Light-Duty ZEV and Install Three	$60,291.16	No
ML18098	City of Redondo Beach	2/1/2019	3/31/2023	3/31/2024	$89,400.00	$0.00	Install Six EV Charging Stations	$89,400.00	No
ML18099	City of Laguna Hills	3/1/2019	5/31/2023		$32,250.00	$0.00	Install Six EV Charging Stations	$32,250.00	No
ML18100	City of Brea	10/29/2020	12/28/2024		$56,500.00	$0.00	Install Thirteen EV Charging Stations	$56,500.00	No
ML18101	City of Burbank	2/1/2019	4/30/2024		$137,310.00	$0.00	Install Twenty EV Charging Stations	$137,310.00	No
ML18128	City of Aliso Viejo	8/30/2019	11/29/2023		$65,460.00	$0.00	Purchase Two Light-Duty ZEVs and Install S	$65,460.00	No
ML18129	City of Yucaipa	12/14/2018	3/13/2023		$63,097.00	$0.00	Install Six EV Charging Stations	$63,097.00	No
ML18130	City of Lake Forest	3/1/2019	9/30/2022		$106,480.00	$0.00	Install Twenty-One EVSEs	$106,480.00	No
ML18132	City of Montclair	4/5/2019	9/4/2023		$50,000.00	$0.00	Install Eight EVSEs	$50,000.00	No
ML18134	City of Los Angeles Dept of General	5/3/2019	5/2/2028		$290,000.00	$0.00	Purchase Five Medium-Duty ZEVs	$290,000.00	No
ML18135	City of Azusa	12/6/2019	12/5/2029		$55,000.00	$0.00	Purchase Three Light-Duty ZEVs and One H	$55,000.00	No
ML18136	City of Orange	4/12/2019	8/11/2024		$42,500.00	$40,000.00	Purchase Four Light-Duty ZEVs and Install	$2,500.00	No
ML18137	City of Wildomar	3/1/2019	5/31/2021	12/1/2021	$50,000.00	$0.00	Install Bicycle Trail	$50,000.00	No
ML18138	City of La Canada Flintridge	2/8/2019	5/7/2023		$50,000.00	$32,588.07	Install Four EVSEs and Install Bicycle Racks	$17,411.93	No
ML18139	City of Calimesa	8/30/2019	7/29/2020	11/29/2021	$50,000.00	$0.00	Install Bicycle Lane	$50,000.00	No
ML18140	City of Bell Gardens	12/14/2018	12/13/2028		$50,000.00	$0.00	Purchase Two Heavy-Duty Near-ZEVs	$50,000.00	No
ML18141	City of Rolling Hills Estates	2/14/2020	1/13/2024		$40,000.00	$0.00	Purchase One Light-Duty ZEV and Install Tw	$40,000.00	No
ML18142	City of La Quinta	4/24/2019	2/23/2023	8/23/2023	$51,780.00	$0.00	Install Two EV Charging Stations	$51,780.00	No
ML18143	City of La Habra	10/18/2019	9/17/2025	9/17/2027	$80,700.00	$73,669.08	Install Two EV Charging Stations	$7,030.92	No
ML18144	City of Fontana Public Works	10/4/2019	12/3/2023		$269,090.00	$0.00	Install Twelve EVSEs	$269,090.00	No
ML18145	City of Los Angeles Dept of Transpor	1/10/2020	4/9/2027		$1,400,000.00	$0.00	Provide One Hundred Rebates to Purchaser	$1,400,000.00	No
ML18146	City of South Gate	3/1/2019	11/30/2023		$127,400.00	$50,000.00	Purchase Five Light-Duty ZEVs and Install T	$77,400.00	No
ML18147	City of Palm Springs	1/10/2019	1/9/2024		$60,000.00	$0.00	Install Eighteen EV Charging Stations	$60,000.00	No
ML18151	County of San Bernardino Departme	8/25/2020	10/24/2029		$200,000.00	$0.00	Purchase Eight Heavy-Duty Near Zero Emis	$200,000.00	No
ML18152	County of San Bernardino Flood Con	8/11/2020	10/10/2029		$108,990.00	$0.00	Purchase Five Heavy-Duty Near Zero Emissi	$108,990.00	No
ML18154	City of Hemet	11/22/2019	9/21/2023	3/21/2024	$30,000.00	$0.00	Purchase Two Light-Duty ZEV and EV Char	$30,000.00	No
ML18156	City of Covina	2/1/2019	3/31/2023	12/31/2023	$63,800.00	$62,713.00	Purchase Four Light-Duty ZEVs and EV Cha	$1,087.00	No
ML18157	City of Los Angeles Bureau of Street	6/21/2019	5/20/2027		$85,000.00	$0.00	Purchase One Medium-Duty ZEV	$85,000.00	No
ML18159	City of Rialto	12/13/2019	5/12/2024		$135,980.00	$0.00	Purchase Nine Light-Duty ZEVs and EV Cha	$135,980.00	No
ML18161	City of Indio	5/3/2019	10/2/2025		$50,000.00	$10,000.00	Purchase 1 Light-Duty Zero Emission, 1 Hea	$40,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML18162	City of Costa Mesa	1/10/2020	7/9/2026		$148,210.00	$0.00	Purchase Three Light-Duty ZEVs and EV Ch	$148,210.00	No
ML18163	City of San Clemente	3/8/2019	12/7/2024	12/7/2025	$85,000.00	$70,533.75	Purchase Four Light-Duty ZEVs and EV Cha	$14,466.25	No
ML18165	City of Baldwin Park	2/1/2019	1/30/2024		$49,030.00	$0.00	Expand CNG Station	$49,030.00	No
ML18167	City of Beverly Hills	3/29/2019	6/28/2025		$50,000.00	$0.00	Purchase Two Heavy-Duty Near-Zero Emissi	$50,000.00	No
ML18168	City of Maywood	3/29/2019	11/28/2022		$7,059.00	$0.00	Purchase EV Charging Infrastructure	$7,059.00	No
ML18169	City of Alhambra	6/14/2019	8/13/2024		$111,980.00	$0.00	Install EV Charging Infrastructure	$111,980.00	No
ML18170	City of Laguna Niguel	1/10/2020	8/9/2028		$85,100.00	$0.00	Purchase Two Light-Duty ZEVs and EV Cha	$85,100.00	No
ML18171	City of El Monte	3/1/2019	4/30/2025		$119,757.00	$68,077.81	Purchase One Heavy-Duty ZEVs and EV Ch	$51,679.19	No
ML18172	City of Huntington Park	3/1/2019	2/28/2025		$65,450.00	$0.00	Purchase One Heavy-Duty ZEV	$65,450.00	No
ML18174	City of Bell	11/22/2019	7/21/2026		$25,000.00	$0.00	Purchase One Heavy-Duty ZEV	$25,000.00	No
ML18177	City of San Bernardino	6/7/2019	12/6/2026		$279,088.00	$0.00	Purchase Medium- and Heavy-Duty Evs and	$279,088.00	No
ML18178	City of La Puente	11/1/2019	11/30/2025	11/30/2026	$25,000.00	$25,000.00	Purchase One Heavy-Duty Near-Zero Emiss	$0.00	No
MS18002	Southern California Association of G	6/9/2017	11/30/2018	4/30/2021	$2,500,000.00	$886,787.98	Regional Active Transportation Partnership	$1,613,212.02	No
MS18003	Geographics	2/21/2017	2/20/2021		$70,453.00	$62,615.96	Design, Host and Maintain MSRC Website	$7,837.04	No
MS18015	Southern California Association of G	7/13/2018	2/28/2021	8/31/2021	$2,000,000.00	$0.00	Southern California Future Communities Par	$2,000,000.00	No
MS18023	Riverside County Transportation Co	6/28/2018	6/27/2021		$500,000.00	$219,962.43	Weekend Freeway Service Patrols	$280,037.57	No
MS18024	Riverside County Transportation Co	6/28/2018	8/27/2021		$1,500,000.00	$659,640.00	Vanpool Incentive Program	$840,360.00	No
MS18027	City of Gardena	11/2/2018	9/1/2026		$365,000.00	$0.00	Install New Limited Access CNG, Modify Mai	$365,000.00	No
MS18029	Irvine Ranch Water District	8/8/2018	10/7/2024		$185,000.00	$0.00	Install New Limited Access CNG Station & T	$185,000.00	No
MS18065	San Bernardino County Transportatio	3/29/2019	8/28/2023		$2,000,000.00	$1,996,473.93	Implement Metrolink Line Fare Discount Pro	$3,526.07	No
MS18066	El Dorado National	12/6/2019	2/5/2026		$100,000.00	$0.00	Install New Limited-Access CNG Station	$100,000.00	No
MS18073	Los Angeles County MTA	1/10/2019	2/9/2026		$2,000,000.00	$0.00	Purchase 40 Zero-Emission Transit Buses	$2,000,000.00	No
MS18104	Orange County Transportation Autho	2/21/2020	3/31/2021		$212,000.00	$165,235.92	Implement College Pass Transit Fare Subsid	$46,764.08	No
MS18106	R.F. Dickson Co., Inc.	7/19/2019	1/18/2026		$265,000.00	$250,000.00	Expansion of Existing Infrastructure/Mechani	$15,000.00	No
MS18108	Capistrano Unified School District	2/1/2019	5/30/2025		$116,000.00	$0.00	Expansion of Existing Infrastructure & Train	$116,000.00	No
MS18110	Mountain View Unified School Distric	2/1/2019	3/31/2025		$275,000.00	$0.00	Install New Limited-Access CNG Infrastructu	$275,000.00	No
MS18112	Banning Unified School District	11/29/2018	11/28/2024	11/28/2025	$275,000.00	$0.00	Install New CNG Infrastructure	$275,000.00	No
MS18114	Los Angeles County Department of P	11/15/2019	11/14/2026		$175,000.00	$0.00	Install New Limited-Access CNG Infrastructu	$175,000.00	No
MS18115	City of Commerce	6/7/2019	12/6/2025		$275,000.00	$0.00	Expansion of Existing L/CNG Infrastructure	$275,000.00	No
MS18116	Los Angeles County Department of P	11/15/2019	11/14/2026		$175,000.00	$0.00	Install New Limited-Access CNG Infrastructu	$175,000.00	No
MS18117	City of San Bernardino	6/7/2019	11/6/2025		$240,000.00	$228,000.00	Expansion of Existing CNG Infrastructure/Me	$12,000.00	No
MS18118	City of Beverly Hills	3/29/2019	7/28/2025		$85,272.00	$0.00	Expansion of Existing CNG Infrastructure	$85,272.00	No
MS18122	Universal Waste Systems, Inc.	2/1/2019	3/31/2025	3/31/2026	$200,000.00	$0.00	Install New Limited Acess CNG Infrastructur	$200,000.00	No
MS18124	County Sanitation Districts of Los An	7/31/2019	2/28/2027		$275,000.00	$0.00	Install New Limited-Access CNG Infrastructu	$275,000.00	No
MS18125	U.S. Venture	5/9/2019	8/8/2025		$200,000.00	$180,000.00	Install New Limited-Access CNG Infrastructu	$20,000.00	No
MS18175	Regents of the University of Californi	6/7/2019	8/6/2025		$1,000,000.00	$0.00	Expansion of Existing Hydrogen Station	$1,000,000.00	No

Total: 107

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Pending Execution Contracts									
ML18148	City of San Dimas				$50,000.00	$0.00	Implement Bike Share Program	$50,000.00	No
ML18149	City of Sierra Madre				$50,000.00	$0.00	Implement Bike Share Program	$50,000.00	No
ML18166	City of Placentia				$25,000.00	$0.00	Purchase One Heavy-Duty Near-Zero Emiss	$25,000.00	No
ML18179	City of Rancho Mirage				$50,000.00	$0.00	Traffic Signal Synchronization	$50,000.00	No
MS18180	Omnitrans				$83,000.00	$0.00	Modify Vehicles Maintenance Facility and Tr	$83,000.00	No
Total: 5									
Declined/Cancelled Contracts									
ML18075	City of Orange				$25,000.00	$0.00	One Heavy-Duty Vehicle	$25,000.00	No
ML18150	City of South El Monte				$20,000.00	$0.00	Implement Bike Share Program	$20,000.00	No
ML18153	City of Cathedral City	5/3/2019	4/2/2025		$52,215.00	$0.00	Install EV Charging Infrastructure	$52,215.00	No
ML18158	City of Inglewood				$146,000.00	$0.00	Purchase 4 Light-Duty Zero Emission, 4 Hea	$146,000.00	No
ML18164	City of Pomona				$200,140.00	$0.00	Purchase Three Heavy-Duty ZEVs	$200,140.00	No
MS18009	Penske Truck Leasing Co., L.P.	8/8/2018	12/7/2020		$82,500.00	$0.00	Modify Maintenance Facility & Train Technici	$82,500.00	No
MS18013	California Energy Commission				$3,000,000.00	$0.00	Advise MSRC and Administer Hydrogen Infr	$3,000,000.00	No
MS18017	City of Banning				$225,000.00	$0.00	Expansion of Existing CNG Infrastructure	$225,000.00	No
MS18018	City of Norwalk	6/8/2018	9/7/2019		$75,000.00	$0.00	Vehicle Maintenance Facility Modifications	$75,000.00	No
MS18107	Huntington Beach Union High School				$225,000.00	$0.00	Expansion of Existing Infrastructure	$225,000.00	No
MS18109	City of South Gate				$175,000.00	$0.00	Install New Limited-Access CNG Infrastructu	$175,000.00	No
MS18111	Newport-Mesa Unified School District				$175,000.00	$0.00	Expansion of Existing CNG Infrastructure	$175,000.00	No
MS18113	City of Torrance				$100,000.00	$0.00	Expansion of Existing CNG Infrastructure	$100,000.00	No
MS18119	LBA Realty Company XI LP				$100,000.00	$0.00	Install New Limited-Access CNG Infrastructu	$100,000.00	No
MS18121	City of Montebello				$70,408.00	$0.00	Expansion of Existing CNG Infrastructure	$70,408.00	No
Total: 15									
Closed Contracts									
ML18022	City of Desert Hot Springs	5/3/2018	1/2/2020	1/2/2021	$50,000.00	$50,000.00	Traffic Signal and Synchronization Project	$0.00	Yes
ML18126	City of Lomita	12/7/2018	1/6/2020		$26,500.00	$13,279.56	Install bicycle racks and lanes	$13,220.44	Yes
MS18001	Los Angeles County MTA	6/29/2017	4/30/2018		$807,945.00	$652,737.07	Provide Clean Fuel Transit Service to Dodge	$155,207.93	No
MS18004	Orange County Transportation Autho	8/3/2017	4/30/2019		$503,272.00	$456,145.29	Provide Special Rail Service to Angel Stadiu	$47,126.71	Yes
MS18005	Orange County Transportation Autho	1/5/2018	4/30/2019		$834,222.00	$834,222.00	Clean Fuel Bus Service to OC Fair	$0.00	Yes
MS18006	Anaheim Transportation Network	10/6/2017	2/28/2020		$219,564.00	$9,488.22	Implement Anaheim Circulator Service	$210,075.78	No
MS18008	Foothill Transit	1/12/2018	3/31/2019		$100,000.00	$99,406.61	Special Transit Service to LA County Fair	$593.39	Yes
MS18010	Southern California Regional Rail Aut	12/28/2017	7/31/2019		$351,186.00	$275,490.61	Implement Special Metrolink Service to Unio	$75,695.39	Yes
MS18011	Southern California Regional Rail Aut	2/9/2018	6/30/2018		$239,565.00	$221,725.12	Special Train Service to Festival of Lights	$17,839.88	Yes
MS18014	Regents of the University of Californi	10/5/2018	12/4/2019	3/4/2020	$254,795.00	$251,455.59	Planning for EV Charging Infrastructure Inve	$3,339.41	Yes
MS18016	Southern California Regional Rail Aut	1/10/2019	3/31/2019		$87,764.00	$73,140.89	Special Train Service to Auto Club Speedwa	$14,623.11	Yes
MS18025	Los Angeles County MTA	11/29/2018	5/31/2019		$1,324,560.00	$961,246.86	Special Bus and Train Service to Dodger Sta	$363,313.14	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS18102	Orange County Transportation Autho	10/4/2019	5/31/2020		$1,146,000.00	$1,146,000.00	Implement OC Flex Micro-Transit Pilot Proje	$0.00	Yes
MS18103	Orange County Transportation Autho	2/8/2019	9/7/2020		$642,000.00	$613,303.83	Install Hydrogen Detection System	$28,696.17	Yes
MS18105	Southern California Regional Rail Aut	1/10/2019	6/30/2019		$252,696.00	$186,830.04	Special Train Service to the Festival of Light	$65,865.96	Yes
Total: 15									
Closed/Incomplete Contracts									
ML18133	City of Rancho Mirage	12/7/2018	11/6/2020		$50,000.00	$0.00	Traffic Signal Synchronization	$50,000.00	No
MS18026	Omnitrans	10/5/2018	1/4/2020		$83,000.00	$0.00	Modify Vehicles Maintenance Facility and Tr	$83,000.00	No
Total: 2									
Open/Complete Contracts									
ML18019	City of Hidden Hills	5/3/2018	5/2/2022	5/2/2023	$49,999.00	$49,999.00	Purchase Two Light-Duty ZEVs and EVSE	$0.00	Yes
ML18021	City of Signal Hill	4/6/2018	1/5/2022		$49,661.00	$46,079.31	Install EV Charging Station	$3,581.69	Yes
ML18028	City of Artesia	6/28/2018	3/27/2025		$50,000.00	$50,000.00	Install EVSE	$0.00	Yes
ML18032	City of Arcadia	2/1/2019	4/30/2025		$24,650.00	$24,650.00	Purchase 1 Heavy-Duty Near-ZEV	$0.00	No
ML18033	City of Duarte	8/8/2018	2/7/2025		$50,000.00	$50,000.00	Purchase 1-HD ZEV	$0.00	Yes
ML18035	City of Westlake Village	8/8/2018	11/7/2022		$50,000.00	$50,000.00	Install EVSE	$0.00	Yes
ML18037	City of Westminster	6/28/2018	6/27/2024	12/27/2026	$120,900.00	$120,900.00	Install EVSE, Purchase up to 3-LD ZEV & 1-	$0.00	Yes
ML18040	City of Agoura Hills	7/13/2018	6/12/2022		$17,914.00	$17,914.00	Install EV Charging Infrastructure	$0.00	Yes
ML18042	City of San Fernando	6/28/2018	2/27/2024		$10,000.00	$10,000.00	Purchase 1 Light-Duty ZEV	$0.00	Yes
ML18045	City of Culver City Transportation De	6/28/2018	6/27/2025		$51,000.00	$51,000.00	Purchase Eight Near-Zero Vehicles	$0.00	Yes
ML18048	City of Lynwood	6/28/2018	10/27/2024		$93,500.00	$44,505.53	Purchase Up to 3 Medium-Duty Zero-Emissi	$48,994.47	No
ML18049	City of Downey	7/6/2018	5/5/2023		$148,260.00	$148,116.32	Install EV Charging Stations	$143.68	Yes
ML18052	City of Garden Grove	8/8/2018	10/7/2022		$53,593.00	$46,164.28	Purchase 4 L.D. ZEVs and Infrastructure	$7,428.72	No
ML18054	City of La Habra Heights	8/8/2018	4/7/2022		$9,200.00	$9,200.00	Purchase 1 L.D. ZEV	$0.00	Yes
ML18061	City of Moreno Valley	4/9/2019	2/8/2025		$25,000.00	$25,000.00	Purchase 1 Heavy-Duty Near-ZEV	$0.00	Yes
ML18062	City of Beaumont	8/8/2018	9/7/2024		$25,000.00	$25,000.00	Purchase 1 Heavy-Duty Near-ZEV	$0.00	Yes
ML18070	City of Lomita	11/29/2018	6/28/2022		$6,250.00	$6,250.00	Purchase 1 Light-Duty ZEV	$0.00	No
ML18071	City of Chino Hills	9/7/2018	10/6/2022		$20,000.00	$20,000.00	Purchase 2 Light-Duty ZEVs	$0.00	Yes
ML18072	City of Anaheim	12/18/2018	11/17/2026		$239,560.00	$239,560.00	Purchase 9 Light-Duty ZEVs & 2 Med/Hvy-D	$0.00	Yes
ML18074	City of Buena Park	12/14/2018	6/13/2026		$107,960.00	$107,960.00	EV Charging Infrastructure	$0.00	No
ML18076	City of Culver City Transportation De	10/5/2018	10/4/2023		$1,130.00	$1,130.00	Purchase Light-Duty ZEV	$0.00	Yes
ML18077	City of Orange	11/2/2018	10/1/2022		$59,776.00	$59,776.00	Four Light-Duty ZEV and EV Charging Infras	$0.00	Yes
ML18079	City of Pasadena	12/7/2018	11/6/2023		$183,670.00	$183,670.00	EV Charging Infrastructure	$0.00	Yes
ML18085	City of Orange	4/12/2019	10/11/2026		$50,000.00	$50,000.00	Purchase Two Heavy-Duty Near-Zero Emissi	$0.00	Yes
ML18086	City of Los Angeles Bureau of Street	2/8/2019	4/7/2023		$300,000.00	$300,000.00	Install Sixty EV Charging Stations	$0.00	Yes
ML18097	City of Temple City	11/29/2018	7/28/2022		$16,000.00	$12,000.00	Purchase Two Light-Duty ZEVs	$4,000.00	No
ML18127	City of La Puente	2/1/2019	2/28/2023		$10,000.00	$7,113.70	Purchase Light-Duty Zero Emission Vehicle	$2,886.30	Yes
ML18131	City of Los Angeles, Police Departm	5/3/2019	12/2/2022		$19,294.00	$19,294.00	Purchase Three Light-Duty ZEVs	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML18155	City of Claremont	7/31/2019	9/30/2023		$50,000.00	$35,608.86	Install EV Charging Infrastructure	$14,391.14	No
ML18160	City of Irwindale	3/29/2019	12/28/2022		$14,263.00	$14,263.00	Purchase Two Light-Duty ZEVs	$0.00	Yes
ML18173	City of Manhattan Beach	3/29/2019	2/28/2023		$49,000.00	$49,000.00	Purchase Two Light-Duty ZEVs and EV Cha	$0.00	Yes
ML18176	City of Coachella	3/1/2019	11/30/2024		$58,020.00	$58,020.00	Install EV Charging Stations	$0.00	Yes
MS18012	City of Hermosa Beach	2/2/2018	2/1/2024		$36,000.00	$36,000.00	Construct New Limited-Access CNG Station	$0.00	Yes
MS18120	City of Redondo Beach	2/1/2019	9/30/2025		$275,000.00	$275,000.00	Install New Limited-Access CNG Infrastructu	$0.00	Yes
MS18123	City Rent A Bin DBA Serv-Wel Dispo	12/14/2018	2/13/2025		$200,000.00	$200,000.00	Install New Limited-Access CNG Infrastructu	$0.00	Yes

Total: 35

FY 2018-2021 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
MS21002	Better World Group Advisors	11/1/2019	12/31/2022		$265,079.00	$75,300.30	Programmatic Outreach Services	$189,778.70	No
MS21003	Orange County Transportation Autho	7/8/2020	5/31/2021		$468,298.00	$0.00	Provide Express Bus Service to the Orange	$468,298.00	No
MS21004	Los Angeles County MTA	1/7/2021	5/31/2023		$2,188,899.00	$0.00	Clean Fuel Bus Service to Dodger Stadium	$2,188,899.00	No
Total: 3									
Pending Execution Contracts									
MS21005	Southern California Association of G				############	$0.00	Implement Last Mile Goods Movement Progr	############	No
Total: 1									
Closed Contracts									
MS21001	Los Angeles County MTA	8/30/2019	7/29/2020		$1,148,742.00	$285,664.87	Implement Special Transit Service to Dodger	$863,077.13	No
Total: 1									

Back to Agenda

March 5, 2021 Governing Board Meeting

Item 29 - California Air Resources Board Monthly Report

Due to time constraints, the February 25, 2021 CARB meeting summary was not included; therefore, this item was pulled from consideration and will be provided at the next Board meeting.

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 31

PROPOSAL: Determine That Proposed Amended Rule 218 - Continuous Emission Monitoring, Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications, Are Exempt from CEQA; Amend Rule 218; and Adopt Rules 218.2 and 218.3

SYNOPSIS: Proposed Amended Rule 218 (PAR 218) will provide a phase-out provision to transition facilities into the revised provisions for CEMS which are specified in Proposed Rules 218.2 and 218.3 (PR 218.2 and PR 218.3). PR 218.2 and PR 218.3 will establish specifications for installation and operation for continuous emission monitoring system (CEMS) at non-RECLAIM and former RECLAIM facilities. PR 218.2 and PR 218.3 specify performance requirements for certification and quality assurance of CEMS that are used to continuously measure pollutant concentrations for compliance with rule limits and/or permit requirements.

COMMITTEE: Stationary Source, January 22, 2021, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached Resolution:

1. Determining that Proposed Amended Rule 218 - Continuous Emission Monitoring, Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications, are exempt from the requirements of the California Environmental Quality Act; and
2. Amending Rule 218 - Continuous Emission Monitoring; and Adopting Rule 218.2 - Continuous Emission Monitoring System: General Provisions, and Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications.

Wayne Nastri
Executive Officer

SR:SN:MK:GQ:YZ

Background

A continuous emission monitoring system (CEMS) is the combination of equipment used to measure pollutant concentrations or mass emissions on a continuous basis using analyzer measurements and computer software. For non-RECLAIM facilities, Rule 218 - Continuous Emissions Monitoring, and Rule 218.1 - Continuous Emissions Monitoring Performance Specifications, establish specifications for installation and operation of CEMS to ensure accuracy and precision of monitoring pollutant concentrations for compliance with source-specific rules and permit conditions. For RECLAIM facilities, Rule 2011 - Requirements for Monitoring, Reporting, and Recordkeeping for SOx Emissions, and Rule 2012 - Requirements for Monitoring, Reporting, and Recordkeeping for NOx Emissions, establish specifications for installation and operation of CEMS to ensure accuracy and precision of monitoring mass emissions for compliance with SOx and NOx RECLAIM, respectively.

As part of the transition of NOx RECLAIM facilities to a command-and-control regulatory structure, staff is proposing to amend Rule 218 and adopt two new monitoring rules consolidating existing requirements from Rules 218, 218.1 and 2012, along with clarifications to those requirements, and new provisions to streamline or codify existing procedures. The new rules, Proposed Rules 218.2 - Continuous Emission Monitoring System: General Provisions, and 218.3 - Continuous Emission Monitoring System: Performance Specifications, (PR 218.2 and PR 218.3), will apply to CEMS at non-RECLAIM facilities and former RECLAIM facilities, with specifications for both former RECLAIM CEMS previously certified according to the RECLAIM program, as well as non-RECLAIM CEMS previously certified according to Rules 218 and 218.1.

Public Process

The development of Proposed Amended Rules 218 (PAR 218), PR 218.2, and PR 218.3 was conducted through a public process. Staff held eleven working group meetings on the following dates: March 13, 2019, May 2, 2019, June 11, 2019, September 12, 2019, November 12, 2019, February 13, 2020, June 26, 2020, July 16, 2020, October 6, 2020 and November 5, 2020. A Public Workshop was held on January 6, 2021. Staff also held numerous individual meetings with stakeholders and conducted multiple site visits as part of this rulemaking process.

Proposed Rules and Amendments

PR 218.2 and PR 218.3 will provide new CEMS requirements for non-RECLAIM and former RECLAIM facilities. PR 218.2 is based on Rule 218 with a focus on CEMS administrative requirements and proposes to revise the provisions retained from Rule 218 with key modifications on the certification process for CEMS modification and the requirements for reporting. PR 218.2 also incorporates a new provision (subdivision (e)) that would require CEMS to be in continuous operation, except during the defined CEMS maintenance and repair, and allow CEMS to be shut down when the unit (emission source) goes offline for at least one week.

PR 218.3 is based on Rule 218.1 with a focus on CEMS performance specification and proposes to revise the provisions retained from Rule 218.1 with key modifications on span range, data acquisition and handling system, relative accuracy test audit, and calibration gas requirements. PR 218.3 also incorporates a new provision to provide specifications on the data handling method for data measured below 10 percent or above 95 percent of the upper span value, emission data averaging method, CEMS data availability requirements, and CEMS out-of-control period and alternative data acquisition.

PAR 218 will incorporate a phase-out provision that requires the owner or operator of any CEMS subject to Rules 218 and 218.1 to transition to comply with PR 218.2 and PR 218.3 according to the implementation schedule specified in each of the proposed rules. The schedule varies from 12 months to several years depending on applicable source-specific rule.

Key Issues and Responses
Through the rulemaking process, staff has worked with the stakeholders to address comments and resolve key issues. Staff is not aware of any remaining key issues.

California Environmental Quality Act (CEQA)
Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 and is included as Attachment F to this Board Letter. If the project is approved, the Notice of Exemption will be electronically filed with the State Clearinghouse to be posted on their CEQAnet Web Portal, which may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2021. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

Socioeconomic Impact Assessment
PAR 218, PR 218.2, and PR 218.3 would potentially affect 500 CEMS devices at RECLAIM facilities and 250 CEMS at non-RECLAIM facilities. The petroleum refineries industry (NAICS 324110) has the highest number of devices by industry (estimated 274 active CEMS). Under the proposed rules and amendments, the affected facilities would be required to purchase data acquisition and handling systems software that controls the CEMS equipment.

The total annual cost of the proposed rules and amendments in the 218 Series are expected to be from $1.5 to $2.2 million annually between 2024 and 2049, respectively. Implementation of PAR 218, PR 218.2, and PR 218.3 is expected to result in 44 to 68 jobs foregone on average, annually, between 2024 and 2049. The majority of the jobs foregone are in the sectors of manufacturing (NAICS 31-33), construction (NAICS 23), and retail trade (NAICS 44-45). The jobs foregone represent less than 0.001 percent of the regional baseline jobs, and the impact on competitiveness are expected to be minimal.

AQMP and Legal Mandates

PAR 218, PR 218.2, and PR 218.3 are related to 2016 AQMP Control Measure CMB-05 which addresses the transition of NOx RECLAIM facilities to command-and-control as they specify the CEMS requirements for command-and-control rules for RECLAIM and former RECLAIM facilities. PAR 218, PR 218.2, and PR 218.3 will be submitted to CARB and U.S. EPA for inclusion in the SIP.

Implementation and Resource Impacts

Although there will be an increased workload implementing PAR 218, PR 218.2, and PR 218.3 to process CEMS recertification, existing staff resources are sufficient at this time to implement the proposed rules.

Attachments

A. Summary of Proposal
B. Key Issues and Responses
C. Rule Development Process
D. Key Contacts List
E. Resolution
F. Notice of Exemption from CEQA
G-1. Proposed Amended Rule 218
G-2. Proposed Rule 218.2
G-3. Proposed Rule 218.3
H. Final Staff Report
I. Board Meeting Presentation

ATTACHMENT A
SUMMARY OF PROPOSAL

Proposed Amended Rule 218 – Continuous Emission Monitoring
Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions
Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications

Summary of Proposed Amendment to Rule 218

- Incorporates an implementation schedule (PR 218.2 (d) or 218.3 (d)) requiring owners of operators of any CEMS currently subject to Rule 2012 (RECLAIM) or Rules 218 and 218.1 (non-RECLAIM) to comply with the requirements specified in Proposed Rules 218.2 and 218.3.

Summary of Proposed Rule 218.2

Proposed Rule 218.2 is largely based on Rule 218. Most revisions to Proposed Rule 218.2 are to improve clarity or codify the current practices with the following key modifications:

- Implementation Schedule (identical to the PR 218.3 subdivision)
  - Provides pathways for owners or operators of RECLAIM and non-RECLAIM CEMS to transition to comply with PR 218.2 and 218.3
- Definitions
  - Adds new definitions for new terms or additional clarifications
- Certification Requirements
  - Codifies the current practice by providing:
    - An application process for a CEMS modification required within 30 days due to CEMS failure; and
    - Alternative processes for modification on CEMS components that are not listed on the CEMS final certification letter
  - Provisionally validates CEMS data recorded during the certification or recertification period
- Reporting Requirements
  - Adds two new reporting provisions for reporting CEMS shutdowns during long-term shutdowns and submittal of relative accuracy test audit report, consistent with RECLAIM CEMS requirements
- Monitoring Requirements
  - Allows CEMS non-operation for up to 96 hours for each occurrence, and additional 96 hours if the unit is offline
  - Allows CEMS non-operation when the unit is offline for 168 consecutive hours (7 days) or longer (long term unit shutdown)
  - Provides options for how to demonstrate unit offline

Summary of Proposed Rule 218.3

Proposed Rule 218.3 is largely based on Rule 218.1. Most revisions to Proposed Rule 218.3 are to improve clarity or codify the current practices with the following key modifications:

- Implementation Schedule (identical to the PR 218.2 subdivision)
  - Provides pathways for owners or operators of RECLAIM and non-RECLAIM CEMS to transition to comply with PR 218.2 and 218.3
- Definitions
  - Adds new definitions for new terms or additional clarifications
- Pre-certification Requirements
  - Provides more flexibility for span range requirements
  - Requires status codes being recorded by the data acquisition and handling system
- Certification Test Requirements
  - Requires correction actions within 8 hours of receiving the audible alert for analyzer enclosure temperature drift
  - Lowers the de minimis standard of a relative accuracy test audit from 1.0 ppm to 0.5 ppm for units with a rule or permitted concentration limit at or lower than 5.0 ppm
- Quality Assurance Testing Requirements
  - Specifies grace period, unit restart, and exemption for the tests
  - Adds testing requirements for ACEMS, stack flow monitor, a fuel meter, aligning with RECLAIM CEMS requirements
- Calibration Gas and Zero Gas
  - Provides more certification program options for calibration gas
- Data Handling
  - Specifies data recording, data validity, and spiking data percentage threshold for emission data above 95 percent of the upper span value
  - Defines emission data averaging methods, aligning with U.S. EPA CFR 40 Part 60 and Part 75 for the hourly averaging method
  - Addresses CEMS data availability calculation and threshold
  - Defines CEMS out-of-control period
  - Provides options for alternative data acquisition

ATTACHMENT B

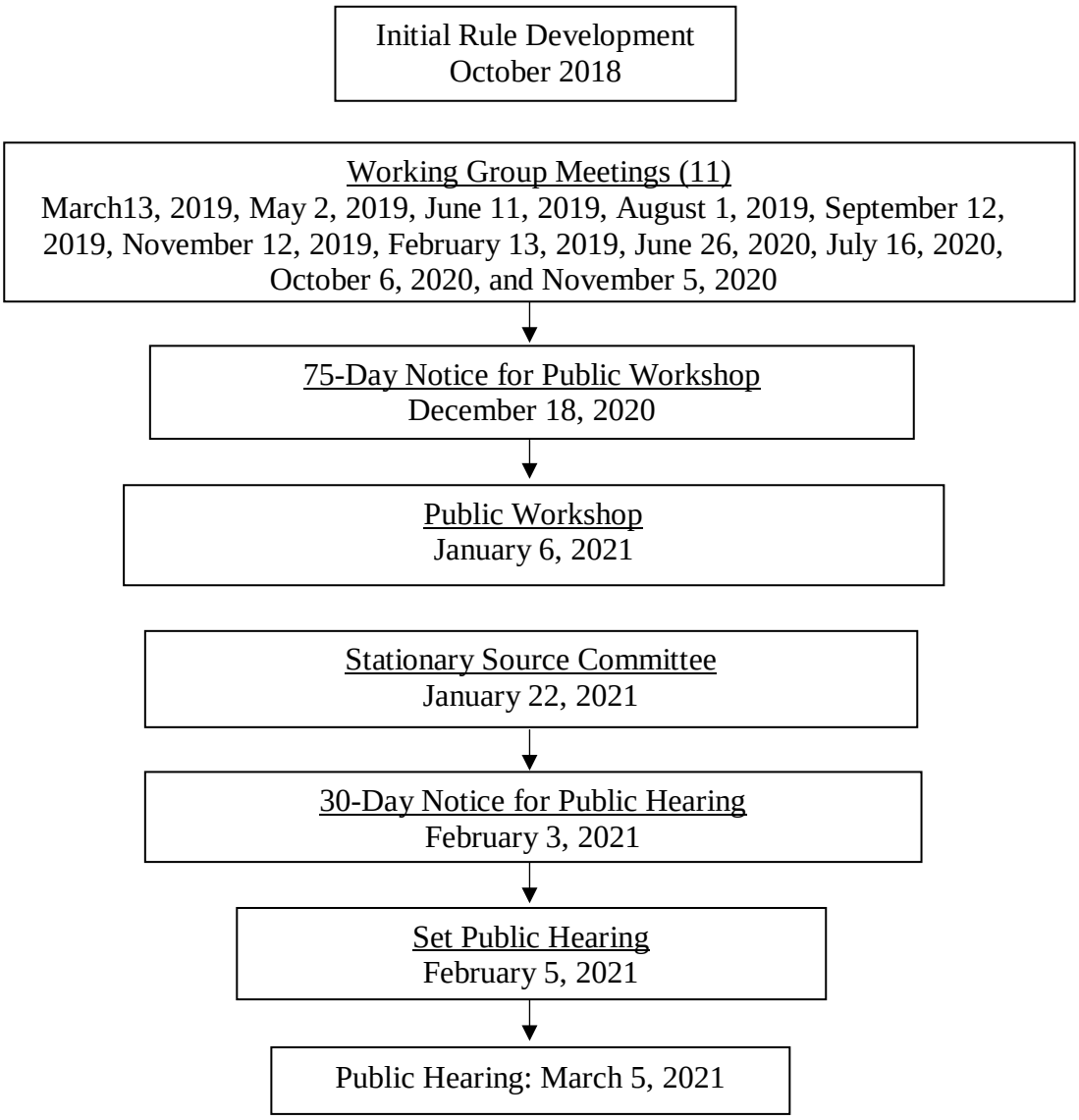
KEY ISSUES AND RESPONSES

Proposed Amended Rule 218 – Continuous Emission Monitoring **Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions** **Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications**
Throughout the rulemaking process, staff worked with stakeholders to address their comments. Staff is not aware of any remaining key issues.

ATTACHMENT C

RULE DEVELOPMENT PROCESS

Proposed Amended Rule 218 – Continuous Emission Monitoring
Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions
Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications



Twenty Nine (29) months spent in rule development
One (1) Public Workshop
One (1) Stationary Source Committee Meeting
Eleven (11) Working Group Meetings

ATTACHMENT D

KEY CONTACTS LIST

United States Environmental Protection Agency (U.S. EPA)

California Air Resources Board (CARB)

Southern California Alliance of Publicly Owned Treatment Works (SCAP)

California Council for Environmental and Economic Balance (CCEEB)

Western States Petroleum Association (WSPA)

Ramboll

CEMTEK KVB-Enertec

VIM Technologies

Cisco CEMS

Rockwell Automation

FERCo

York Engineering

Almega Environmental

AirKinetics Inc

Taylor Environmental Services

Montrose Environmental

California Resources Corporation

Phillips 66

Marathon Petroleum

Valero Energy

Signal Hill Petroleum

AltAir Paramount

Anheuser-Busch LLC

Walnut Creek Energy

Southern California Gas Company

Southern California Edison

City of Riverside

Los Angeles Department of Water and Power

City of Glendale Water and Power

City of Pasadena

California Institute of Technology

Los Angeles County Sanitation District

Orange County Sanitation District

Inland Empire Utilities Agency

ATTACHMENT E

RESOLUTION NO.21-_____

A Resolution of the Governing Board of the South Coast Air Quality Management District (South Coast AQMD) determining that Proposed Amended Rule 218 – Continuous Emission Monitoring, Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications are exempt from the requirements of the California Environmental Quality Act (CEQA).

A Resolution of the South Coast AQMD Governing Board amending Rule 218 – Continuous Emission Monitoring, and adopting Rule 218.2 – Continuous Emission Monitoring System: General Provisions, and Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications.

WHEREAS, the South Coast AQMD Governing Board finds and determines that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are considered a "project" as defined by CEQA; and

WHEREAS, the South Coast AQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of the proposed project pursuant to such program (South Coast AQMD Rule 110); and

WHEREAS, the South Coast Governing Board finds and determines after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA, that the proposed project is exempt from CEQA; and

WHEREAS, the South Coast AQMD Governing Board finds and determines that because the proposed project addresses CEMS requirements for facilities transitioning from RECLAIM to a command-and-control regulatory structure, provides additional clarifications and flexibility to the rules, and codifies existing practices to improve transparency requirements without requiring physical modifications involving construction, it can be seen with certainty that there is no possibility that proposed project may have any significant adverse effects on the environment, and is therefore, exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption; and

WHEREAS, the South Coast AQMD staff has prepared a Notice of Exemption for the proposed project, that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

WHEREAS, the South Coast AQMD staff conducted a public workshop on January 6, 2021 regarding Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3; and

WHEREAS, Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3, and supporting documentation, including but not limited to, the Notice of Exemption and Final Staff Report were presented to the South Coast AQMD Governing Board and the South Coast AQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the South Coast AQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (Section 30.5(4)(D)(i) of the Administrative Code), that no modifications have been made to the proposed project since notice of public hearing was published that are so substantial as to significantly affect the meaning of Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rules, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because the proposed project is exempt from CEQA; and

WHEREAS, Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 will be submitted for inclusion into the State Implementation Plan; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has determined that a need exists to amend Rule 218 and adopt Rule 218.2 and Rule 218.3 to address CEMS requirements which are part of the monitoring requirements for facilities that transition from RECLAIM to a command-and-control regulatory structure, provide additional clarification and flexibility to the rules, and codify existing practices to improve transparency of requirements; and

WHEREAS, the South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Sections 40000, 40001, 40440, 40702, 40725 through 40728, 41508, and 41511 of the Health and Safety Code; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are written or displayed so that their meanings can be easily understood by persons directly affected by them; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 do not impose the same requirements as any existing state or federal regulations, and the proposed amended rule and proposed rules are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 reference the following statutes which the South Coast AQMD hereby implements, interprets or makes specific: Health and Safety Code Sections 40001(a) (rules to meet air quality standards); 40440(a) (rules to carry out the plan); 40440(c) (rules to carry out programs efficiently and cost-effectively); 40702 (adoption of rules and regulations); and 41511 (requirements to determine emissions); and

WHEREAS, the South Coast AQMD Governing Board finds that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 do not impose new or more stringent monitoring, reporting, or recordkeeping requirements, and therefore the requirements of Health and Safety Code Section 40727.2 are satisfied under subsection (g); and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 do not significantly affect air quality or emission limitations , and therefore the requirements of Health and Safety Code Section 40728.5 are inapplicable but that staff has nevertheless prepared a Socioeconomic Impact Assessment; and

WHEREAS, the South Coast AQMD Governing Board has determined that the Socioeconomic Impact Assessment, as contained in the Final Staff Report, of Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

WHEREAS, the South Coast AQMD Governing Board finds that the Socioeconomic Impact Assessment for Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3, as contained in the Final Staff Report are consistent with the provisions of Health and Safety Code Sections 40440.8, 40728.5, and 40920.6; and

WHEREAS, the South Coast AQMD Governing Board has determined that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 will result in increased costs to the affected industries, yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment, as contained in the Final Staff Report; and

WHEREAS, the South Coast AQMD Governing Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

WHEREAS, a public hearing has been properly noticed in accordance with the provisions of Health and Safety Code Section 40725 and 40440.5; and

WHEREAS, the South Coast AQMD Governing Board has held a public hearing in accordance with all provisions of law; and

WHEREAS, the South Coast AQMD specifies the Planning and Rules Manager of Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3, as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

NOW, THEREFORE, BE IT RESOLVED, that the South Coast AQMD Governing Board does hereby determine, pursuant to the authority granted by law, that the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. This information was presented to the South Coast AQMD Governing Board, whose members exercised their independent judgement and reviewed, considered and approved the information therein prior to acting on the proposed project; and

BE IT FURTHER RESOLVED, that the South Coast AQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3, as set forth in the attached, and incorporated herein by reference; and

BE IT FURTHER RESOLVED, that the Executive Officer is hereby directed to forward a copy of this Resolution, and Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 to the California Air Resources Board for approval and subsequent submittal to the U.S. Environmental Protection Agency for inclusion into the State Implementation Plan.

DATE:_____ _____

CLERK OF THE BOARDS

ATTACHMENT F

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: **NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

PROJECT TITLE: **PROPOSED AMENDED RULE 218 – CONTINUOUS EMISSION MONITORING; PROPOSED RULE 218.2 – CONTINUOUS EMISSION MONITORING SYSTEM: GENERAL PROVISIONS; AND PROPOSED RULE 218.3 – CONTINUOUS EMISSION MONITORING SYSTEM: PERFORMANCE SPECIFICATIONS**

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (South Coast AQMD), as Lead Agency, has prepared a Notice of Exemption pursuant to CEQA Guidelines Section 15062 – Notice of Exemption for the project identified above.

If the proposed project is approved, the Notice of Exemption will be electronically filed with the State Clearinghouse of the Governor's Office of Planning and Research to be posted on their CEQAnet Web Portal which, upon posting, may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2021. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

To: Governor's Office of Planning and Research - State Clearinghouse
1400 Tenth St, Suite 222
Sacramento, CA 95814-5502

From: South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Project Title: Proposed Amended Rule 218 – Continuous Emission Monitoring; Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions; and Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications

Project Location: The proposed project is located within the South Coast Air Quality Management District's (South Coast AQMD) jurisdiction, which includes the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties), and the Riverside County portion of the Salton Sea Air Basin and the non-Palo Verde, Riverside County portion of the Mojave Desert Air Basin.

Description of Nature, Purpose, and Beneficiaries of Project: As part of transitioning South Coast AQMD's NOx RECLAIM program to a command-and-control regulatory structure, amendments are proposed to Rule 218 and two new rules, Proposed Rule (PR) 218.2 and PR 218.3 are proposed for adoption. Specifically, Proposed Amended Rule (PAR) 218 will incorporate a phase-out provision that requires an owner or operator of any Continuous Emission Monitoring System (CEMS) subject to Rules 218 and 218.1 to transition to comply with PR 218.2 and PR 218.3 in accordance with the implementation schedule as specified in subdivision (d) of either PR 218.2 or PR 218.3, as applicable. PR 218.2 and PR 218.3 establish requirements and specifications for installation and operation for CEMS at non-RECLAIM and former RECLAIM facilities. Specifically, PR 218.2 focuses on CEMS administrative requirements and has been developed to: 1) incorporate provisions retained from Rule 218 but with updates to the certification process for CEMS modifications and reporting requirements; and 2) incorporate a new provision that would require the continuous operation of CEMS, except during qualifying CEMS maintenance and repair or when an emission source is offline for at least one week. PR 218.3 focuses on CEMS performance specifications and has been developed to: 1) incorporate provisions retained from Rule 218.1 but with modifications to span range, data acquisition and handling system, relative accuracy test audit, and calibration gas requirements; and 2) incorporate a new provision which provides specifications on data handling methods for data measured below 10 percent or above 95 percent of the upper span value, emission data averaging method, CEMS data availability requirements, and CEMS out-of-control period and alternative data acquisition.

Public Agency Approving Project:	**Agency Carrying Out Project:**
South Coast Air Quality Management District	South Coast Air Quality Management District

Exempt Status: CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption

Reasons why project is exempt: South Coast AQMD, as Lead Agency, has reviewed the proposed project pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. Since the proposed project addresses CEMS requirements for facilities transitioning from RECLAIM to a command-and-control regulatory structure, provides additional clarifications and flexibility to the rules, and codifies existing practices to improve transparency requirements without requiring physical modifications involving construction, it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption.

Date When Project Will Be Considered for Approval (subject to change):
South Coast AQMD Governing Board Public Hearing: March 5, 2021

CEQA Contact Person:	**Phone Number:**	**Email:**	**Fax:**
Ryan Bañuelos	(909) 396-3479	rbanuelos@aqmd.gov	(909) 396-3982
Rules Contact Person:	**Phone Number:**	**Email:**	**Fax:**
Yanrong Zhu	(909) 396-3289	yzhu1@aqmd.gov	(909) 396-3982

Date Received for Filing: _____ **Signature:** *(Signed Upon Board Approval)*

Barbara Radlein
Program Supervisor, CEQA
Planning, Rule Development, and Area Sources

ATTACHMENT G-1

(Adopted January 9, 1976)(Amended April 1, 1977)(Amended August 5, 1977)
(Amended April 6, 1979)(Amended August 7, 1981)(Amended May 14, 1999)(PAR 218 March 2021)

PROPOSED AMENDED RULE 218. CONTINUOUS EMISSION MONITORING

(a) Definitions

(1) ANALYZER- the part of the continuous emission monitoring system (CEMS) that analyzes the appropriate gaseous constituents of the conditioned gaseous sample or measures stack gas volumetric flow and fuel flow rates, as applicable.

(A) Contaminant Analyzer - the part of the CEMS that detects the air contaminant and represents those concentrations in a signal output.

(B) Diluent Analyzer - the part of the CEMS that detects oxygen, carbon dioxide or other diluent gas concentrations and represents those concentrations in a signal output.

(C) Fuel Flowmeter - the part of the CEMS that detects the parameters of all essential measurement sub-systems (e.g., temperature, pressure, differential pressure, frequency, gas density, gas composition, heating value) and generates signal outputs which are a function of the fuel flow rate and all essential measurement sub-system parameters.

(D) Stack Flowmeter - the part of the CEMS that detects the parameters from all essential measurement sub-systems (e.g., temperature, static and atmospheric pressure, gas density, gas composition, molecular weight, gas moisture content) and generates signal outputs which are a function of the stack gas volumetric flow rate and all essential measurement sub-system parameters.

(2) CALIBRATION - a procedure performed to ensure that the CEMS accurately measures and record air contaminant or diluent gas concentration, flow rate and other parameters necessary to generate data, as evidenced by calibration checks, and achieved by periodic manual or automatic adjustment.

(3) CALIBRATION CHECK - a procedure performed to determine the CEMS response to a given gaseous compound concentration. A certified calibration gas mixture is injected into the CEMS as close to the probe tip as practical.

(4) CERTIFIED CEMS - a CEMS installed, tested, operated, maintained, and calibrated according to the applicable requirements of Rule 218; that has met the applicable performance specifications according to Rule 218(c)(1)(B), and, has received written approval and conditions thereto applying, from the Executive Officer.

(5) CERTIFIED GAS MIXTURE - a gas mixture manufactured, analyzed and certified according to "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards" - EPA-600/R97/121, September 1997 Revision (EPA Protocol) or any subsequent version published by EPA. This definition incorporates by reference EPA Protocol.

(6) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) - the total combined equipment and systems required to continuously determine air contaminants and diluent gas concentrations and/or mass emission rate of a source effluent (as applicable). The CEMS consists of three major subsystems: sampling interface, analyzer and data acquisition system.

(7) CONTINUOUS MONITORING - monitoring in which a minimum of one measurement (e.g., concentration, mass emission, flow rate) is taken and recorded each minute.

(8) DATA ACQUISITION SYSTEM (DAS) - the part of the CEMS that processes data generated by the analyzer and records the results, thus creating a permanent record of the output signal in terms of concentration, flow rate, and/or any other applicable parameter necessary to generate the required data in units of applicable standard. The DAS consists of all equipment such as a computer required to convert the original recorded values to any values required for reporting.

(9) DILUENT GAS - a gas present in a calibration gas mixture or in the source emissions which is present in quantities significantly larger than the air contaminant.

(10) LABORATORY APPROVAL PROGRAM (LAP) - a program administered by the District that grants test-method-specific approvals to independent testing laboratories or firms that perform tests to determine source compliance with District rules and regulations.

(11) MODIFICATION REQUIRING RECERTIFICATION - any change to the basic equipment, control equipment, contaminant concentration, interfering substances, or CEMS (or SCEMS) that is deemed by the Executive Officer to have a potential for adversely affecting the ability of the CEMS to provide accurate, precise and timely data representative of the stack emissions for which the CEMS (or SCEMS) is required.

(12) QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN - a written document in which the specific procedures for the operation, calibration and maintenance of a certified CEMS are described in detail, including additional quality assurance assessments and the corrective action system. The purpose of this plan is to ensure that the CEMS generates, collects and reports valid data that is precise, accurate, complete, and of a quality that meets the requirements, performance specifications, and standards of Rules 218 and 218.1.

(13) ROUTINE MAINTENANCE - preventive evaluation and repair (if necessary) of CEMS performed at specified intervals to preclude system failure. Routine maintenance may be performed as recommended by the manufacturer or a documented standard operating procedure determined through operating experience and approved by the Executive Officer. Repairs to a malfunctioning system are excluded from this definition.

(14) SAMPLING INTERFACE - that part of the CEMS that performs sample acquisition using one or more of the following operations: extraction, physical/chemical separation, transportation or conditioning of a representative sample from a designated source.

(15) SEMI-CONTINUOUS EMISSION MONITORING - a monitoring technique in which a minimum of one measurement (e.g. concentration, mass emission, flow rate) is taken and recorded every fifteen (15) minutes.

(16) SEMI-CONTINUOUS EMISSION MONITORING SYSTEM (SCEMS) - the total combined equipment and systems to semi-continuously determine air contaminant and diluent gas concentrations and/or the mass emission rate in a source effluent (as applicable) The system consists of three major subsystems: sampling interface, analyzer and data acquisition system. This class of monitoring includes but is not limited to gas chromatography, integrated sensitized tape analyzer, other sample integration based technologies, and time-shared CEMS.

(17) SYSTEM FAILURE - inability of the CEMS to meet the requirements of Rule 218.1, "Continuous Emission Monitoring Performance Specifications", or, Code of Federal Regulations, Title 40 - "Protection of Environment", Part 60 - "Standards of Performance for New Stationary Sources", Appendix F - "Quality Assurance Procedures".

(18) TIME-SHARING - a monitoring technique where an analyzer and possibly the associated sample conditioning system is used on more than one source.

(19) WORKING DAY - Monday through Friday excluding holidays.

(20) ZERO CHECK- a procedure performed to determine the response of the CEMS to a given zero gas standard by means of injecting the zero gas into the CEMS as close to the probe tip as practical.

(21) ZERO GAS - a gas containing less than a specified amount of the air contaminant or diluent gas which, when periodically injected into the CEMS, is used to check CEMS' response to the absence of the air contaminant or diluent gas.

(b) Applicability and Monitoring Requirements for New, Modified and Existing CEMS

(1) The provisions of this Rule shall apply to all sources that require CEMS as specified in the regulations or permit conditions, with the following exceptions:

(A) This Rule shall not apply to CEMS subject to Regulation XX - "Regional Clean Air Incentives Market (RECLAIM)", Regulation IX - "New Source Performance Standards (NSPS)", Regulation X - National Emission Standards for Hazardous Air Pollutants (NESHAPS), or Regulation XXXI - "Acid Rain Program".

(B) This Rule shall not apply to CEMS subject to permit conditions where the purpose of the CEMS is to monitor the performance of the basic and/or control equipment and not to determine compliance with any applicable limit or standard.

(C) This Rule shall not apply to CEMS where alternative performance specifications are required by another District rule.

(2) The owner or operator of any equipment subject to this Rule shall provide, properly install, operate, and maintain in calibration and good working order a certified CEMS to measure the concentration and/or emission rates, as applicable, of air contaminants and diluent gases, flow rates, and other

required parameters. The owner or operator shall also provide the necessary records and other data necessary to calculate air contaminant emission rates or concentrations, as specified in Rule 218, Sections (e) and (f).

(3) The owner or operator of any CEMS subject to Rules 218 and 218.1 shall continue to comply with the requirements specified in these rules until the applicable date of compliance specified in Rule 218.2 (d) or Rule 218.3 (d).

(c) Requirements for New and Modified CEMS and SCEMS

(1) Application and Approval Requirements for New and Modified CEMS

(A) The owner or operator of any equipment subject to this Rule shall submit to the Executive Officer an "Application for CEMS" or "Application for CEMS Modification", as applicable. Any application submitted on or after May 14, 1999, shall require an initial approval by the Executive Officer prior to installation of a new CEMS or modification of an existing CEMS. The Executive Officer shall notify the applicant in writing within 60 calendar days of receipt of an application for a new CEMS, or within 30 calendar days of receipt of an application for a modification to an existing CEMS, if the application contains sufficient information to be deemed complete. Where an application has been determined to be incomplete, the Executive Officer shall request specific information needed to complete the application. Upon receipt of any complete resubmittal or the additional information, plans or specifications after the application has been deemed incomplete, a new 30-day period shall begin during which the Executive Officer shall determine the completeness of the application and notify the applicant. Within 90 days of installation, a person operating or using CEMS shall undertake a series of certification tests. If the equipment served by the CEMS is not operating at the time of complete CEMS installation, then the CEMS shall undergo a series of certification tests within 90 days from the next start-up of the equipment served by the CEMS. The purpose of the certification tests is to demonstrate the CEMS performance pursuant to the specifications in accordance with the provisions of Rule 218, Section (c)(1)(B). The owner or operator shall notify the Executive Officer in writing at least 14 days

before the scheduled certification test dates. The certification tests shall be performed by a testing laboratory approved under the District Laboratory Approval Program. Data from such tests shall be submitted to the Executive Officer within 45 days following test completion. If satisfactory performance is demonstrated, final approval of the CEMS shall be granted. Subsequent operation and maintenance of the certified CEMS shall be in accordance with the provisions of Rule 218, Section (c)(1)(B). After final approval, modifications made to the CEMS shall be reviewed and approved by the Executive Officer according to the specifications stipulated in Rule 218, Section (c)(1)(B), and may require all or a portion of performance tests to be conducted.

(B) Upon submission of an "Application for CEMS" or "Application for CEMS Modification" as prescribed in Rule 218 Section (c)(1)(A), the applicant shall indicate either one of the following conditions:

(i) That the CEMS shall be reviewed and certified according to the provisions of Rule 218.1, "Continuous Emission Monitoring Performance Specifications", Section (b), and the subsequent operation and maintenance of the certified CEMS shall be in accordance with the provisions of Rule 218, Sections (b), (e), (f) and (g) and of the requirements of Rule 218.1(b) and (d), or,

(ii) That the CEMS shall be reviewed and certified according to the applicable provisions of the Code of Federal Regulations, Title 40 - "Protection of Environment", Part 60 - "Standards of Performance for New Stationary Sources" (40CFR60), Appendix B - "Performance Specifications" (Appendix B), and the subsequent operation and maintenance of the certified CEMS shall be in accordance with the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of 40CFR60, Appendix F - "Quality Assurance Procedures" (Appendix F).

Notwithstanding the requirements of Section (c)(1)(B)(ii), any alternative test methods for 40CFR60, Appendices B and F shall be those that are listed in Rule 218.1, Table 1 - Reference Methods.

(C) A "Notification of Pre-Approved Modification" and report of results of prescribed quality assurance checks may be submitted in-lieu of the "Application for CEMS Modification" when the modification has been made in accordance with the written technical guidance document approved by the Executive Officer.

(2) Application and Approval Requirements for New and Modified SCEMS

(A) In-lieu of submitting an application for CEMS per Rule 218, Section (c)(1), the owner or operator of any equipment subject to this Rule, may elect to submit an application for a SCEMS if the averaging time for the applicable limits(s) for which the CEMS is required is 24 hours or greater; or, if the owner or operator demonstrates, to the satisfaction of the Executive Officer, that no CEMS technology is commercially available for the applicable contaminant and the applicable limits.

(B) If the conditions in Rule 218, Section (c)(2)(A), above, do not apply, the owner or operator of any equipment subject to this Rule may still elect to submit an application for a SCEMS in lieu of a CEMS, subject to the following:

(i) The owner or operator demonstrates that the concentrations and/or emissions required to be monitored would be equivalent to that monitored by a CEMS for the applicable averaging period, to the satisfaction of the Executive Officer;

(ii) The SCEMS shall be capable to take and record a minimum of one measurement (concentration, mass emission rate and/or flow rate, as applicable) every 15 minutes allowing as equally spaced data points as practical;

(iii) The owner or operator shall include in the QA/QC plan the method of calculating the 15-minute averages for compliance determination to the applicable limit or standard;

(iv) If an exeedance of the allowable limit or standard is calculated using fewer than 100% valid data points, then the District shall use any relevant data for the operation of the equipment (basic and control, as applicable) to verify the calculated exeedance;

(v) If a time shared SCEMS is proposed, it shall meet the performance specifications of Rule 218.1, Section (e);

(C) The requirements for the application submittal and approval of CEMS as provided in Rule 218, Section (c)(1) shall also apply for SCEMS applications.

(3) Operation of CEMS or SCEMS During Certification Testing

CEMS or SCEMS shall be certified as configured for the normal operation of the CEMS or SCEMS with respect to sample acquisition, sample conditioning, pollutant/diluent detection, data requirements and reporting.

(4) Quality Assurance/Quality Control Plan for New or Modified CEMS or SCEMS

(A) The owner or operator of CEMS or SCEMS who elects the performance specifications according to Rule 218, Section (c)(1)(B)(i), shall submit to the Executive Officer for approval a CEMS QA/QC Plan within 45 days of CEMS installation and no later than 30 days before the certification tests.

(B) Alternative Quality Assurance Practices

The owner or operator of CEMS or SCEMS who elects the performance specifications according to Rule 218, Section (c)(1)(B)(i), may choose to develop alternative CEMS operational test requirements to be included in the CEMS QA/QC procedures that assure data of equivalent or better quality. These alternative QA/QC procedures shall be submitted with the facility QA/QC Plan and are subject to the approval of the Executive Officer.

(d) Requirements for Existing CEMS and SCEMS

(1) Requirements for Existing CEMS

(A) A CEMS installed and granted final approval before May 14, 1999 shall be maintained and operated according to the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of Rule 218.1, Sections (c) and (d).

(B) A CEMS application for initial and final approval submitted to the Executive Officer before May 14, 1999 shall be reviewed and approved by the Executive Officer according to the specifications and requirements of Rule 218.1, Sections (c) and (d). After final approval, the CEMS shall be operated and maintained according to

the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of Rule 218.1, Sections (c) and (d).

(C) Modifications requiring recertification to any existing CEMS shall be reviewed and approved according to the conditions under Rule 218 Section (c)(1)(B)(i) or (ii), as applicable. After final approval, the modified CEMS shall be operated and maintained according to the conditions under Rule 218, Section (c)(1)(B)(i) or (ii), as applicable.

(D) (i) All existing CEMS as prescribed in Rule 218, Sections (d)(1)(A) and (B) shall comply with the provisions of Rule 218.1, Sections (b) and (d), or 40CFR60 Appendices B and F, as applicable, and of Rule 218, Sections (b) and (c), no later than May 14, 2006.

(ii) The requirements of Rule 218, Section (d)(1)(D)(i) shall be waived for a period of three years if the owner or operator demonstrates, to the satisfaction of the Executive Officer, that the existing CEMS is providing data that are of a quality commensurate with the original performance specifications and other indicators of consistent data quality. Data quality factors that will be considered include:

(I) Relative Accuracy
(II) Calibration Error
(III) Calibration Drift
(IV) Zero Drift
(V) Valid data return percentage
(VI) Availability or up-time percentage
(VII) Breakdown frequency and duration
(VIII) Excursions beyond quality control limits in QA plan.

The owner or operator may apply for a waiver under this sub-section every three years after May 14, 2006. This sub-section shall not apply to existing CEMS that are required to comply with the provisions of Rule 218.1, Sections (b) and (d), or, 40 CFR60, Appendices B and F, as applicable, and Rule 218, Sections (b) and (c), as a result of CEMS modifications requiring recertification, rule implementation, or, compliance with a permit condition.

(E) The owner or operator of existing CEMS shall develop and implement a written Quality Assurance/ Quality Control (QA/QC) Plan no later than May 14, 2000. The written QA/QC Plan shall be kept on record and available for inspection upon request by the Executive Officer.

(F) On or before May 14, 2005, the owner or operator of any existing CEMS shall submit to the Executive Officer for approval:

(i) A certification signed by an authorized representative of the facility that the existing CEMS meets the requirements of Rule 218, Section (c), or,

(ii) An "Application for CEMS Modification", with the applicable fee(s) as specified in Rule 301, or,

(iii) An application for waiver according to Rule 218, Section (d)(1)(D)(i), with documentation supporting the required demonstration;

(2) Requirements for Existing SCEMS

(A) A SCEMS installed and granted final approval before May 14, 1999 shall be maintained and operated according to the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of Rule 218.1, Sections (c) and (d).

(B) A SCEMS application for initial and final approval submitted to the Executive Officer before May 14, 1999 shall be reviewed and approved by the Executive Officer according to the specifications and requirements of Rule 218.1, Sections (c) and (d). After final approval, the SCEMS shall be operated and maintained according to the provisions of Rule 218, Sections (b), (e), (f) and (g), and the requirements of Rule 218.1, Sections (c) and (d).

(C) Modifications requiring recertification to any existing SCEMS shall be reviewed and approved according to the conditions under Rule 218 Section (c)(1)(B)(i) or (ii), as applicable. After final approval, the modified CEMS shall be operated and maintained according to the conditions under Rule 218, Section (c)(1)(B)(i) or (ii), as applicable.

(D) The owner or operator of an existing SCEMS operating on or before May 14, 1999 shall be required to comply with the provisions of Rule 218.1 Section (e) - "Time Sharing Requirements" and with the

provisions of Rule 218.1 Sections (b) and (d), or, 40CFR60 Appendix B and F, as applicable, when the equipment served by the time-shared SCEMS is modified such that:

(i) One or more of the sources monitored requires a new monitoring range,

(ii) The operating permit is modified to require continuous monitoring, or,

(iii) An applicable source specific rule is adopted or revised to require continuous monitoring.

Subsequent operation and maintenance of the SCEMS shall be according to the provisions of Rule 218, Section (c)(1)(B)(i) or (ii), as applicable.

(e) Retention of Records for New, Modified and Existing CEMS and SCEMS

(1) The records of the data obtained from the CEMS recording devices shall clearly indicate concentrations or emission rates, or both, as specified by the Executive Officer. Records shall be maintained by the CEMS owner or operator for a minimum period of two years, unless otherwise specifically provided by another District regulation or permit conditions, and, shall be made available to the Executive Officer upon request.

(2) All calculations, raw parameter data used for calculations, records of the occurrence and duration of any start up, shutdown or malfunction, performance test, evaluation, calibration, adjustment and maintenance of the CEMS as well as calibration gas traceability shall be retained by the CEMS operator for a minimum period of two years unless otherwise specifically provided by another District regulation or permit conditions, and shall be made available to the Executive Officer upon request.

(f) Reporting Requirements for New, Modified and Existing CEMS and SCEMS

Unless otherwise specifically provided by another District regulation or permit conditions, the following reporting requirements shall apply to new, modified and existing CEMS and SCEMS:

(1) A CEMS owner or operator shall provide a summary of the concentration and/or emission rate data, as applicable, obtained from the CEMS, as well as any additional information specified by the Executive Officer, to evaluate the accuracy and precision of the measurements. The summary

shall be submitted once every six months to the Executive Officer, except when more frequent reporting is specifically required by another District rule, or the Executive Officer, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. The summary report shall be submitted within 30 days following the end of the six-month period being reported, in the form and manner prescribed by the Executive Officer. The summary shall be maintained on-site in a retrievable and readable form and shall be made available to the Executive Officer upon request. The submitted summaries shall be available for public inspection at the District.

(2) The CEMS owner or operator shall report any concentration level and/or emission rate, as applicable, in excess of the regulated limit within 24 hours or the next working day after such occurrence in the form and manner prescribed by the Executive Officer. The report shall include the following information:

(A) Time intervals, date, and magnitude of the excess concentration level, nature and cause of the excess concentration (if known), corrective action(s) taken, preventive measure(s) adopted, specific location of CEMS, the equipment or CEMS involved and the facility contact person.

(B) The averaging period used for data reporting shall correspond to the averaging period specified in the rule or permit condition governing the concentration and/or emission rate, if applicable.

(3) Reports of CEMS Failure or Shutdown

(A) The CEMS owner or operator shall notify the Executive Officer within 24 hours or the next working day, in the event of a system failure or shutdown, which exceeds 24 hours. Zero and calibration checks and routine maintenance do not require reporting.

(B) In the case of a CEMS failure or shutdown, compliance with the provisions of Rule 218, Section (b) is waived for a period not to exceed 96 consecutive hours. Such waiver is extended beyond 96 consecutive hours only if a petition for an interim variance is filed in accordance with Regulation V and shall terminate at the time the Hearing Board acts upon such variance petition. CEMS owners or operators of qualified facilities may obtain a Hearing Board approval of an alternative operating condition following the

established procedure in District Rule 518.2 - Federal Alternative Operating Condition.

(C) Regularly scheduled CEMS maintenance shall be deferred until the report required under Rule 218, Section (f)(2) is made, if the system is measuring a concentration equal to or exceeding the emission standard, and if such deferral is not reasonably expected to result in damage to the system.

(D) Continuous emission monitoring requirement~~s~~ shall not apply during regular calibration checks of the system, or routine maintenance and repair lasting 60 minutes or less.

(g) Posting of Written Approval for New, Modified and Existing CEMS and SCEMS

The CEMS owner or operator of an approved CEMS shall affix a written notice of approval or a legible facsimile thereof, upon the equipment or within 26 feet of the equipment as prescribed in District Rule 206, in a manner such that it is clearly visible, legible, and safely accessible. In the event that the equipment is constructed or operated that the notice of approval or its legible facsimile cannot be so placed, such notice or legible facsimile shall be mounted on a location approved by the Executive Officer.

ATTACHMENT G-2

(Proposed Rule 218.2 March 2021)

PROPOSED RULE 218.2 CONTINUOUS EMISSION MONITORING SYSTEM: GENERAL PROVISIONS

(a) Purpose

The purpose of this rule is to specify requirements for Continuous Emission Monitoring Systems (CEMS), Alternative Continuous Emission Monitoring System (ACEMS), and Semi-Continuous Emission Monitoring System (SCEMS). This rule refers to Rule 218.3 for requirements for certifications and quality assurance of CEMS, ACEMS, and SCEMS. Unless otherwise specified, the owner or operator of the CEMS, ACEMS, or SCEMS is responsible for compliance with the requirements specified in this rule.

(b) Applicability

(1) This rule shall apply to the owner or operator of a CEMS, ACEMS, or SCEMS that is required by a South Coast AQMD rule, regulation or permit condition, except for a system that is to monitor:

(A) Performance of the basic or control equipment and not to determine compliance with any rule emission limit or emission standard; or

(B) NOx or SOx emissions subject to Regulation XX - Regional Clean Air Incentives Market (RECLAIM).

(2) All requirements specified for CEMS in this rule shall be applicable for ACEMS and SCEMS, unless otherwise specified.

(c) Definitions

(1) ALTERNATIVE CONTINUOUS EMISSION MONITORING SYSTEM (ACEMS) means a system that uses process or control device operating parameter measurements and a conversion equation, a graph, or computer program to produce results in units of the applicable emission limitation or standard on a continuous monitoring basis, which is demonstrated to the Executive Officer as having the same precision, reliability, accessibility, and timeliness as the data provided by a certified CEMS or certified CEMS component in accordance with Rule 218.2 and Rule 218.3.

(2) ANALYZER means the part of the continuous emission monitoring system (CEMS) that analyzes the appropriate gaseous constituents of the conditioned gaseous sample or measures stack gas volumetric flow and fuel flow rates, as applicable.

(A) Contaminant Analyzer - the part of the CEMS that detects the air contaminant and represents those concentrations in a signal output.

(B) Diluent Analyzer - the part of the CEMS that detects oxygen, carbon dioxide or other diluent gas concentrations and represents those concentrations in a signal output.

(C) Fuel Flowmeter - the part of the CEMS that detects the parameters of all essential measurement sub-systems (e.g., temperature, pressure, differential pressure, frequency, gas density, gas composition, heating value) and generates signal outputs which are a function of the fuel flow rate and all essential measurement sub-system parameters.

(D) Stack Flowmeter - the part of the CEMS that detects the parameters from all essential measurement sub-systems (e.g., temperature, static and atmospheric pressure, gas density, gas composition, molecular weight, gas moisture content) and generates signal outputs which are a function of the stack gas volumetric flow rate and all essential measurement sub-system parameters.

(3) CALIBRATION means a procedure performed to ensure that the CEMS accurately measures and records air contaminant or diluent gas concentration, flow rate and other parameters necessary to generate data.

(4) CALIBRATION ERROR TEST means a procedure performed to determine CEMS response to a given gaseous compound concentration by means of injecting a certified calibration gas mixture into the CEMS as close to the probe tip as practical.

(5) CEMS FAILURE means the CEMS or a component of the CEMS ceases normal operation, and thus is incapable of providing the required data to demonstrate compliance with the applicable limit or standard for which this CEMS is dedicated.

(6) CEMS FINAL CERTIFICATION LETTER means the final approval of CEMS certification or recertification, which at a minimum includes:

(A) Unit (emission source) and control equipment (if applicable) description.

(B) Stack description.

(C) Probe configuration and conditions.

(D) Instrument type, manufacturer, model number, and serial number for each of the contaminant analyzer (s), diluent analyzer, and fuel flowmeter (if applicable).

(E) Instrument type, manufacturer, and model number for:

(i) Sample conditioning system; and

(ii) Data acquisition and handling system and programmable logic controller.

(F) Certified span range(s) for each of the contaminant analyzer(s), diluent analyzer, and fuel or stack flowmeter (if applicable).

(7) CEMS MODIFICATION means a modification to a CEMS component that is identified on the CEMS final certification letter, or a modification which may include, but not be limited to the CEMS sampling interface, gas conditioning system, analyzer, or data acquisition and handling system that has a potential for adversely affecting the ability of the CEMS to provide accurate, precise and timely data representative of emissions for the unit being monitored.

(8) CERTIFIED CEMS means a CEMS certified and maintained to meet the performance specifications pursuant to the applicable requirements of Rules 218.2 and 218.3.

(9) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) means the total combined equipment and systems, including the sampling interface, analyzers, and data acquisition and handling system, required to continuously determine air contaminants and diluent gas concentrations and/or mass emission rate of a source effluent (as applicable).

(10) CONTINUOUS MONITORING means monitoring in which a minimum of one measurement (e.g., concentration, mass emission, flow rate) is taken and recorded each minute.

(11) DATA ACQUISITION AND HANDLING SYSTEM (DAHS) means the part of the CEMS that processes data generated by the analyzer and records the results, thus creating a permanent record of the output signal in terms of concentration, flow rate, and/or any other applicable parameter

necessary to generate the required data in units of applicable standard. The DAHS consist of all equipment such as a computer and the software required to convert the original recorded values to any values required for reporting.

(12) DILUENT GAS means a constituent of the flue gas that is measured by the CEMS in order to provide values to calculate emission levels.

(13) FORMER RECLAIM FACILITY means a facility, or any of its successors,

that was in the NOx Regional Clean Air Incentives Market (RECLAIM) as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the NOx RECLAIM program.

(14) LABORATORY APPROVAL PROGRAM (LAP) means a program administered by the South Coast AQMD for granting test-method-specific approvals to independent testing laboratories or firms that perform tests to determine source compliance with the South Coast AQMD rules and regulations.

(15) MAINTENANCE means preventive evaluation and adjustment (if necessary) of CEMS performed to preclude system failure. Maintenance may be performed as recommended by the manufacturer or a documented standard operating procedure determined through operating experience and approved by the Executive Officer. Repairs to a malfunctioning system are excluded from this definition.

(16) PUBLICLY OWNED SEWAGE-WATER-LANDFILL FACILITY means a sewage treatment facility, water delivery facility, or landfill gas control or processing facility, that is owned and operated by a public agency.

(17) RECLAIM means the REgional CLean Air Incentives Market program.

(18) RECLAIM FACILITY – means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.

(19) SAMPLING INTERFACE means that part of the CEMS that performs sample acquisition using one or more of the following operations: extraction, physical/chemical separation, transportation, or conditioning of a representative sample from a designated source.

(20) SEMI-CONTINUOUS EMISSION MONITORING SYSTEM (SCEMS) means an emission monitoring system that is different from a regular CEMS on response time and data acquisition frequency. SCEMS continuously takes and records measurements (e.g. concentration, mass emission, flow rate) at a minimum of once in every fifteen (15) minutes. SCEMS includes but is not limited to gas chromatography, integrated sensitized tape analyzer, other sample integration based technologies, and time-shared CEMS.

(21) TIME-SHARED CEMS means an emission monitoring system where the analyzer, and possibly the associated sample conditioning system, is used on more than one source. A time-shared CEMS is categorized as a type of SCEMS under Rules 218.2 and 218.3.

(22) UNIT for the purposes of this rule means the combustion source for which the certified continuous emission monitoring system, or alternative continuous emission monitoring system, monitors the combustion source's emissions.

(d) Implementation Schedule

(1) Prior to the implementation date specified in paragraphs (d)(2) through (d)(5), the owner or operator shall comply with:

(A) Rules 218 and 218.1 for a CEMS that is subject to paragraph (d)(2) or (d)(5); or

(B) Rule 2012 for a CEMS that is subject to paragraph (d)(3).

(2) For a CEMS certified to comply with Rules 218 and 218.1, the owner or operator of the CEMS shall meet the requirements of this rule no later than:

(A) The date an application is submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3);

(B) January 1, 2025, for any CEMS that was certified prior to January 1, 2022 but without an application submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for a CEMS recertification pursuant to paragraph (f)(2) or (f)(3); or

(C) The implementation date of a source-specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) as part of the implementation.

(3) For a CEMS certified to comply with Rule 2012, the owner or operator of the CEMS shall meet the requirements of this rule no later than:

(A) The date an application is submitted to the Executive Officer for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3) that is within twenty-four (24) months after the NOx RECLAIM facility has been notified as a former RECLAIM facility;

(B) Twenty-four (24) months after the NOx RECLAIM facility has been notified as a former RECLAIM facility, if there is no CEMS recertification pursuant to paragraph (f)(2) or (f)(3) during this 24-month period; or

(C) The implementation schedule of a source specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) as part of the implementation.

(4) If a CEMS that is subject to paragraph (d)(2) is sharing the sampling interface or other component(s) with another CEMS that is subject to paragraph (d)(3), the owner or operator of the CEMS shall meet the requirements of this rule based on the later implementation date specified in paragraphs (d)(2) and (d)(3).

(5) The owner or operator of a publicly owned sewage-water-landfill facility that has a CEMS certified to comply with Rules 218 and 218.1, shall meet the requirements of this rule no later than January 1, 2025, or by the implementation date of a source-specific rule requiring the CEMS to be certified or recertified, whichever is later.

(e) Monitoring Requirements

(1) The owner or operator of a CEMS shall install, maintain and operate the CEMS for continuous measurement according to all applicable requirements in Rules 218.2 and 218.3.

(2) If there is a CEMS failure, the owner or operator of a CEMS shall:

(A) Not be subject to the requirements of paragraph (e)(1) for up to 96 hours, provided that the CEMS is:

(i) Undergoing maintenance pursuant to the Quality Assurance and Quality Control Program for the CEMS; or

(ii) Damaged as a result of circumstances beyond the control of the owner or operator of the CEMS;

(B) Submit a notification pursuant to paragraph (i)(3), if the CEMS failure or shut down has occurred for more than 24 hours; and

(C) Submit a notification to the Executive officer for time extension beyond the time period specified in subparagraph (e)(2)(A) for an additional 96 hours, if the unit is not operating and no emissions are generated, as demonstrated pursuant to paragraph (e)(4).

(3) If a unit does not operate for a minimum of 168 consecutive hours, as demonstrated pursuant to paragraph (e)(4), the owner or operator of the CEMS is not subject to the requirements of paragraph (e)(1) after zero emissions have been recorded for a minimum of 4 hours after the unit shutdown, provided that the owner or operator of the CEMS:

(A) Maintains the CEMS operation pursuant to paragraph (e)(1) to record zero emissions for a minimum of 4 hours after the unit shutdown;

(B) Submits the notifications and report in accordance with paragraph (i)(4);

(C) Resumes CEMS operation and meet the requirements of paragraph (e)(1) for a minimum of 4 hours before the unit resumes operation or at which time any emissions are generated; and

(D) Conducts a calibration error test for each CEMS analyzer before any emissions are detected.

(4) Demonstrating a unit is not operating and no emissions are generated

(A) For a unit in which fuel combustion is the only source for the CEMS monitored emissions, the owner or operator of the CEMS shall meet one or more of the following provisions for the entire duration:

(i) Disconnect the fuel line to the unit and place blind flange(s) to prevent fuel flow;

(ii) Demonstrate there is no fuel flow to the unit based on a dedicated fuel flow meter that is quality assured according to manufacturer's recommendation;

(iii) Provide one or more gas bills indicating zero fuel consumption for the unit or the fuel line associated with the unit that is not operating; or

(iv) Demonstrate the unit is not operational based on a stack flow monitoring system certified according to subdivision (f), or any other monitoring system approved by the Executive Officer which shows the exhaust flow is less than the lowest quantifiable rate measurable by South Coast AQMD Methods 1-4.

(B) For a unit in which fuel combustion is not the only source for the CEMS monitored emissions, the owner or operator of the CEMS shall:

(i) Request the Executive Officer's written approval of the method(s) to demonstrate that the unit is not operating and no emissions are generated; and

(ii) Include the above approved method(s) in the QA/QC plan.

(f) Certification Requirements

(1) The owner or operator of a CEMS shall certify or recertify any CEMS that is:

(A) Installed after [*Date of Adoption*];

(B) Modified for any component that is either listed on the certification letter, Technical Guidance Document R-002, or Quality Assurance/Quality Control Plan, unless the Executive Officer determines that such certification or recertification is not necessary; or

(C) Determined by the Executive Officer that a CEMS recertification is required because the QA/QC or performance requirements for the CEMS cannot be achieved in accordance with Rule 218.3 subdivision (g).

(2) The owner or operator of the CEMS shall certify or recertify the CEMS, according to requirements set forth in Rule 218.3 subdivisions (e) and (f) and shall:

(A) Submit a CEMS application form pursuant to paragraph (f)(4);

(B) Obtain an initial approval of the application pursuant to paragraph (f)(5);

(C) Conduct the certification tests for the CEMS pursuant to paragraph (f)(6); and

(D) Obtain a final approval of the application for the CEMS final certification letter pursuant to paragraph (f)(7).

(3) For a CEMS modification required within 30 days due to CEMS failure, the owner or operator of the CEMS shall:

(A) Submit a written notification to the Executive Officer prior to the modification that includes the date and description of the planned modification;

(B) Submit a CEMS application form pursuant to paragraph (f)(4) within 30 days of the CEMS modification and obtain an interim approval of the application pursuant to paragraph (f)(5), except that the owner or operator of the CEMS may commence the CEMS modification without receiving notification from the Executive Officer pursuant to subparagraph (f)(5)(D);

(C) Conduct the certification tests for the CEMS pursuant to subparagraphs (f)(6);

(D) Recertify and operate the CEMS pursuant to Rule 218.3 subdivisions (e) and (f); and

(E) Obtain a final approval of the application for the CEMS final certification letter pursuant to paragraph (f)(7).

(4) The owner or operator of the CEMS shall submit an CEMS application form, FORM ST-220 or its updated version, and any other information specified in the form.

(5) The owner or operator of the CEMS shall receive an initial approval of the CEMS application from the Executive Officer prior to the CEMS installation or modification.

(A) The initial approval of the CEMS application shall be based on the information submitted in the application form that is:

(i) Complete; and

(ii) Accurate in providing information that reflects the unit and CEMS.

(B) Executive Officer shall notify the applicant that the application is complete, in writing within 60 calendar days of receipt of an

application for a new CEMS, or within 30 calendar days of receipt of an application for a modification to an existing CEMS.

(C) If the owner or operator of the CEMS receives notification from the Executive Officer that the application meets the requirements of subparagraph (f)(5)(A), the owner or operator of the CEMS may commence the CEMS installation or modification.

(D) If the owner or operator of the CEMS receives notification from the Executive Officer that the application for initial certification does not meet the requirements of subparagraph (f)(5)(A), the owner or operator of the CEMS shall provide the Executive Officer the specific information needed to meet the requirements of subparagraph (f)(5)(A) within the time specified by the Executive Officer in the notification.

(E) Upon receipt of any complete resubmittal or additional information, plans or specifications after the application has been deemed incomplete, a new 30-day period shall begin during which the Executive Officer shall notify the applicant if the application is complete and grant the initial approval.

(6) Certification Tests

(A) If the unit is operating at the time of completion of the CEMS installation, within 90 days of installation or modification of a CEMS, the owner or operator of a CEMS shall:

(i) Conduct the applicable certification tests specified in Rule 218.3 subdivision (f) for certification of any new CEMS or recertification of a modified CEMS; or

(ii) Meet the testing requirement for each type of CEMS modification in accordance with the latest South Coast AQMD Technical Guidance Documents R-002 and R-003 for recertification of a modified CEMS.

(B) If the unit is not operating at the time of completion of the CEMS installation, then the owner or operator of the CEMS shall conduct the certification tests of the CEMS within 90 days from the start-up and normal operation of the unit monitored by the CEMS in accordance with clause (f)(6)(A).

(C) The certification tests shall be performed by a testing laboratory approved under the South Coast AQMD Laboratory Approval Program.

(i) No later than 14 days before the certification test is conducted, the owner or operator of the CEMS shall notify the Executive Officer in writing the facility name, facility identification number, the device identification number, the certification test date(s) and time(s).

(ii) No later than 45 days of completing a certification test, the owner or operator of the CEMS shall submit the test report to the Executive Officer.

(7) Final Approval

(A) The Executive Officer will issue a CEMS final certification letter as the final approval, if the information in the application form and the certification test reports are determined to meet the requirements specified in Rule 218.3 subdivisions (e) and (f).

(B) The owner or operator of the CEMS shall be notified of the expected issuance date of the CEMS final certification letter by the Executive Officer within 60 days of receiving the certification test report(s) specified in paragraph (f)(6).

(C) The owner or operator of the CEMS shall be notified of a new issuance date of the CEMS final certification letter by the Executive Officer if additional data and/or test(s) are required prior to final approval. This new issuance data will be determined by the Executive officer within 60 days of receiving the additional data and/or test(s).

(8) Modification of CEMS Component Listed in Guidance Document R-002

For a CEMS modification on a component that is not identified on the CEMS final certification letter but is listed on the South Coast AQMD Technical Guidance Document R-002, the owner or operator of the CEMS shall either meet the requirements specified in paragraph (f)(2), or (f)(3) or the alternative CEMS certification requirements. The owner or operator of the CEMS that elects to meet the alternative CEMS certification requirements shall:

(A) Provide a written notification to the Executive Officer prior to the modification that includes the date and description of the planned CEMS modification;

(B) Conduct the required quality assurance tests, in accordance with the South Coast AQMD Technical Guidance Document R-002, within 60 days following the CEMS modification; and

(C) Submit the test reports to the Executive Office within 60 days after completing the tests.

(D) Subject to any further assessment instructed by the Executive Officer to validate the reliability, precision, or accuracy of the CEMS.

(9) The owner or operator of the CEMS that receives written notification from the Executive Officer that an alternative CEMS recertification submitted pursuant to subparagraph (f)(8) is disapproved, shall meet the requirements specified in paragraph (f)(2) or (f)(3) for that specific CEMS modification.

(10) Modification of CEMS Component Listed in Quality Assurance/Quality Control Plan

For a CEMS modification on a component that is not identified on the CEMS final certification letter or listed in the South Coast AQMD Technical Guidance Document R-002, but is listed in the Quality Assurance/Quality Control Plan, the owner or operator of the CEMS shall:

(A) Provide a written notification to the Executive Officer prior to the modification that includes the date and description of the planned CEMS modification;

(B) Submit a modified Quality Assurance/Quality Control Plan to the Executive officer within 30 days of notification; and

(C) Subject to any testing requirement and/or further assessment instructed by the Executive Officer if the modification is deemed to affect the reliability, precision, or accuracy of the CEMS.

(11) Emission Data During CEMS Certification or Recertification

(A) Upon completion of a successful calibration error test pursuant to Rule 218.3 subparagraphs (f)(1)(B) and (f)(1)(C) and prior to the Executive Officer's approval of final CEMS certification or recertification, all the emission data measured and recorded by the

CEMS shall be considered as valid quality assured data, beginning at the hour of passing the calibration error test. The calibration error test for this purpose must be passed before any of the required certification tests pursuant to paragraph (f)(6) is commenced but no more than 14 days prior to the completion of all the required certification tests.

(B) If the Executive Officer disapproves the final CEMS certification or recertification, the valid emission data pursuant to subparagraph (f)(11)(A) shall be retroactively considered invalid data and shall not be utilized for compliance demonstration or considered as available for CEMS data availability calculation, until the hour of the next time completing all the required certification tests pursuant to paragraph (f)(6).

(12) Operation of CEMS During Certification Testing

CEMS shall be certified as configured for the normal operation of the CEMS with respect to sample acquisition, sample conditioning, pollutant/diluent detection, data requirements, and reporting.

(13) SCEMS and ACEMS Certification and Recertification

(A) The owner or operator subject to this rule may elect to certify the following emission monitoring systems:

(i) A SCEMS, not including time-shared CEMS, provided that:

(I) Only commercially available SCEMS instrumentation is capable of accurately and precisely measuring the particular air contaminant concentration or other parameters used to calculate the emission concentration; and

(II) The concentrations and/or emissions required to be monitored would be equivalent to that monitored by a CEMS for the applicable averaging period.

(ii) A time-shared CEMS, provided that the units to be monitored by the time-shared CEMS are:

(I) Physically close to one another, and the proposed time-shared CEMS is approximately equidistant from all monitored units;

(II) Similarly sized and configured, and their gaseous emissions are of approximately the same compositions and concentrations; and

(III) Subject to a similar concentration limit.

(iii) An ACEMS, provided that the system, being designed to provide direct or indirect emission data, has the same precision, reliability, accessibility, and timeliness as a certified CEMS.

(B) Owners or operators of the SCEMS or ACEMS shall comply with the requirements specified in paragraphs (f)(1) through (f)(12) for the SCEMS or ACEMS certification and recertification.

(g) Quality Assurance/Quality Control (QA/QC) Plan

The purpose of a QA/QC plan is to ensure that the CEMS generates, collects and reports valid data that is precise, accurate, complete, and of a quality that meets the requirements, performance specifications, and standards of Rules 218.2 and 218.3.

(1) The owner or operator of the CEMS shall develop and store on site a QA/QC plan, which at a minimum shall include the step-by-step procedures and operations for the quality assurance tests, preventive maintenance, corrective action, recordkeeping, and reporting, in accordance with Guidelines for Continuous Emission Monitoring System Quality Assurance and Quality Control Plan.

(2) For a new CEMS QA/QC Plan, the owner or operator of the CEMS shall submit to the Executive Officer for approval a CEMS QA/QC Plan within 45 days of CEMS installation and no later than 30 days before the certification tests.

(3) For a revised CEMS QA/QC Plan, the owner or operator of CEMS shall submit to the Executive Officer for approval a CEMS QA/QC Plan within 30 days if:

(A) A CEMS modification was conducted and subject to the requirements specified in paragraphs (f)(2), (f)(3), (f)(8) or (f)(10); or

(B) A QA/QC plan revision is required by a provision of Rules 218.2 and 218.3 or requested by the Executive Officer.

(4) Alternative Quality Assurance Practices

The owner or operator of a CEMS may develop alternative CEMS operational test requirements to be included in the CEMS QA/QC procedures that assure data of at least the equivalent quality. These alternative QA/QC procedures shall be submitted with the facility QA/QC Plan and are subject to the approval of the Executive Officer.

(h) Recordkeeping Requirements

(1) The owner or operator of the CEMS, shall maintain records for any CEMS data measured and calculated:

(A) In accordance with Rule 218.3 paragraph (e)(4) and Rule 218.3 subdivision (i); and

(B) For the purpose of demonstrating compliance with any applicable, rule, regulation, or permit condition.

(2) The owner or operator of the CEMS, shall:

(A) Maintain records for the date, time, and description of the occurrence of the CEMS non-operation pursuant to paragraphs (e)(2) and (e)(3);

(B) Maintain a copy of the reports specified in subdivision (i);

(C) Record the cause, date, time period, and corrective action taken for any CEMS out-of-control period;

(D) Record the date, time, and description of the occurrence of any repair, adjustment, or maintenance to the CEMS;

(E) Record the date, time, and emission data of any measurement or test conducted for CEMS certification or recertification; and

(F) Maintain on site all records of any activity conducted according to the QA/QC plan, including but not limited to logbook, measured data and data processing, test reports, and certificates of calibrations gases being used.

(3) Records specified by paragraphs (h)(1) and (h)(2) shall be:

(A) Maintained for a minimum period of two years or a period specified in any rule or permit condition, whichever is longer; and

(B) Made available to the Executive Officer upon request.

(i) Reporting Requirements

(1) Semi-Annual Reporting

(A) The owner or operator of the CEMS shall provide a summary of the concentration and/or emission rate data, as applicable, obtained

from the CEMS, as well as any additional information specified by the Executive Officer, to evaluate the accuracy and precision of the measurements.

(B) Unless a more frequent reporting schedule is required in another South Coast AQMD rule or permit condition, the owner or operator of the CEMS shall submit a summary of the information specified in subparagraph (i)(1)(A) to the Executive Officer for every six-month period, from January 1 to June 30 and from July 1 to December 31, respectively, no later than 60 days after the six-month period.

(2) Excess Emission Reporting

The owner or operator of the CEMS shall notify the Executive Officer by calling 1-800-CUT-SMOGof the concentration level and/or emission rate, as applicable, in excess of the emission limit specified in the applicable rule within 24 hours or the next business day, whichever is later, after such occurrence that includes:

(A) Time intervals, date, and magnitude of the excess concentration level, nature and cause of the excess concentration (if known), corrective action(s) taken, preventive measure(s) adopted, specific location of CEMS, the equipment or CEMS involved and the facility contact person.

(B) The averaging period used for data reporting shall correspond to the averaging period specified in applicable rule or permit condition limiting the concentration and/or emission rate.

(3) CEMS Failure Reporting

(A) If there is a CEMS failure pursuant to paragraph (e)(2) that lasts more than 24 hours, the owner or operator of the CEMS shall notify the Executive Officer by calling 1-800-CUT-SMOG within 24 hours or the next business day, , whichever is later, after CEMS failure occurs.

(B) The notification shall include, at a minimum, the following information:

(i) The cause of the CEMS failure;

(ii) The time or estimated time when the monitoring device became non-operational;

(iii) The time or estimated time the monitoring device returned (or will return) to normal operation; and

(iv) The maintenance performed or corrective and preventative actions taken to prevent future non- operational conditions.

(4) CEMS Shutdown Reporting

In the event of a scheduled CEMS shutdown pursuant to paragraph (e)(3), the owner or operator of the CEMS shall submit:

(A) An initial notification by calling 1-800-CUT-SMOG, at least 96 hours prior to the scheduled CEMS shutdown, specifying the scheduled date and time for unit non-operation and CEMS shutdown;

(B) A written report, within 24 hours of CEMS shutdown that the unit is non-operational and there are no emissions during the period of unit shutdown pursuant to paragraph (e)(4); and

(C) A final notification by calling 1-800-CUT-SMOG, at least 8 hours prior to the scheduled CEMS restart, specifying the scheduled time for the CEMS restart and unit restart.

(5) CEMS Relative Accuracy Test Audit (RATA) Reporting

The owner or operator of the CEMS shall submit the RATA report within 60 days upon completion of the test and shall include all measured data for each run, and relative accuracy or *de minimis* value being calculated.

(j) Posting of Written Approval of CEMS Certification

The owner or operator of a certified CEMS shall affix a written notice of approval or copy thereof, upon the unit or within 26 feet of the unit as prescribed in Rule 206 – Posting of Permit to Operate, in a manner such that it is clearly visible, legible, and safely accessible. In the event that the unit is constructed or operated that the notice of approval or copy cannot be so placed, such notice or copy shall be mounted on a location approved by the Executive Officer.

(k) Exemption

(1) If a rule or permit specify CEMS requirements that are different than requirements specified in Rule 218.3, the owner or operator shall adhere to CEMS requirements in the rule or permit, unless otherwise notified by the Executive Officer.

ATTACHMENT G-3

(Proposed Rule 218.3 March 2021)

PROPOSED RULE 218.3 **CONTINUOUS EMISSION MONITORING SYSTEM: PERFORMANCE SPECIFICATIONS**

(a) Purpose

The purpose of Rule 218.3 is to establish performance specifications on certification and quality assurance and quality control program for Continuous Emission Monitoring Systems (CEMS), Alternative Continuous Emission Monitoring System (ACEMS), and Semi-Continuous Emission Monitoring System (SCEMS). Unless otherwise specified, the owner or operator of the CEMS, ACEMS, or SCEMS is responsible for compliance with the requirements specified in this rule.

(b) Applicability

(1) This rule shall apply to an owner or operator of a CEMS, ACEMS, or SCEMS that is required by a South Coast AQMD rule, regulation or permit condition, except for a system that is to monitor:

(A) Performance of the basic or control equipment and not to determine compliance with any rule emission limit or emission standard; or

(B) NOx or SOx emissions subject to the Regulation XX - Regional Clean Air Incentives Market (RECLAIM).

(2) All requirements specified for CEMS in this rule shall be applicable for ACEMS and SCEMS, unless otherwise specified.

(c) Definitions

(1) ALTERNATIVE CONTINUOUS EMISSION MONITORING SYSTEM (ACEMS) means a system that use process or control device operating parameter measurements and a conversion equation, a graph, or computer program to produce results in units of the applicable emission limitation or standard on a continuous monitoring basis, which is demonstrated to the Executive Officer as having the same precision, reliability, accessibility, and timeliness as the data provided by a certified CEMS or certified CEMS component in accordance with Rule 218.2 and Rule 218.3.

(2) ANALYZER means the part of the continuous emission monitoring system (CEMS) that analyzes the appropriate gaseous constituents of the conditioned gaseous sample or measures stack gas volumetric flow and fuel flow rates, as applicable.

(A) Pollutant Analyzer - the part of the CEMS that detects the air pollutant concentrations and represents those concentrations in a signal output.

(B) Diluent Analyzer - the part of the CEMS that detects oxygen (O2), carbon dioxide (CO2) or other diluent gas concentrations and represents those concentrations in a signal output.

(C) Fuel Flowmeter - the part of the CEMS that detects the parameters of all essential measurement sub-systems (e.g., temperature, pressure, differential pressure, frequency, gas density, gas composition, heating value) and generates signal outputs which are a function of the fuel flow rate and all essential measurement sub-system parameters.

(D) Stack Flowmeter - the part of the CEMS that detects the parameters from all essential measurement sub-systems (e.g., temperature, static and atmospheric pressure, gas density, gas composition, molecular weight, gas moisture content) and generates signal outputs which are a function of the stack gas volumetric flow rate and all essential measurement sub-system parameters.

(3) CALIBRATION means a procedure performed to ensure that the CEMS accurately measures and records the concentration of the specific air pollutant or diluent gas, flow rate and other parameters necessary to generate the required data, as evidenced by calibration error tests and achieved by periodic manual or automatic adjustment.

(4) CALIBRATION DRIFT - change in the CEMS output or response over a specific period of normal continuous operation when the air pollutant or diluent gas concentration at the time of the measurements is the same known value.

(5) CALIBRATION ERROR means the ratio of the absolute value of the difference between the air pollutant or diluent gas concentration indicated

by the CEMS and the known concentration of the calibration gas, to the upper span value, expressed as a percentage.

(6) CALIBRATION ERROR TEST means a procedure performed to determine CEMS response to a given gaseous compound concentration by means of injecting a certified calibration gas mixture into the CEMS as close to the probe tip as practical.

(7) CEMS MODIFICATION means a modification to a CEMS component that is identified on the CEMS final certification letter, or a modification to the CEMS sampling interface, analyzer, or data acquisition and handling system that is deemed by the Executive Officer to have a potential for adversely affecting the ability of the CEMS to provide accurate, precise and timely data representative of emissions for the unit being monitored.

(8) CERTIFIED CEMS means a CEMS installed, tested, operated, maintained, and calibrated according to the applicable requirements of Rules 218.2 and 218.3; that has met the applicable performance specifications of Rule 218.3 and, has received written approval and conditions thereto applying, from the Executive Officer.

(9) CONFIDENCE COEFFICIENT means the 2.5 percent error confidence coefficient for the 95 percent confidence interval of a series of tests.

(10) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) means the total combined equipment and systems required to continuously determine air pollutants and diluent gas concentrations and/or mass emission rate of a source effluent (as applicable). The CEMS consists of three major subsystems: sampling interface, analyzer, and data acquisition and handling system.

(11) DATA ACQUISITION AND HANDLING SYSTEM (DAHS) means the part of the CEMS that records and processes data generated by the analyzer, thus creating a permanent record of the output signal in terms of concentration, flow rate, and any other applicable parameter *necessary* to generate the required data in units of applicable standard. The DAHS consists of all equipment such as a computer and software required to record data and convert the original recorded values to any values required for reporting.

(12) DILUENT GAS means a constituent of the flue gas that is measured by the CEMS, not because it is a pollutant, but because its measurement can be used to provide values used to calculate emission levels.

(13) FORMER RECLAIM FACILITY means a facility, or any of its successors,

that was in the NOx Regional Clean Air Incentives Market (RECLAIM) as of January 5, 2018, as established in Regulation XX, that has received a final determination notification, and is no longer in the NOx RECLAIM program.

(14) LINEARITY ERROR means the percentage error in linearity expressed in terms of the ratio of the absolute value of the difference between the reference value and the mean CEMS response value, to the reference value.

(15) LOWEST VENDOR GUARANTEED SPAN RANGE means the lowest span range that the vendor guarantees to be capable of meeting all current certification requirements of Rules 218.2 and 218.3, as applicable.

(16) MAINTENANCE means the preventive evaluation and adjustment (if necessary) of CEMS performed at specified intervals to preclude system failure. Maintenance may be performed as recommended by the manufacturer or a documented standard operating procedure determined through operating experience and approved by the Executive Officer. Repairs to a malfunctioning system are excluded from this definition.

(17) NINETY-FIVE PERCENT CONFIDENCE INTERVAL means the statistical estimation denoting a range of values which is expected to include a true value with a 95 percent probability.

(18) PUBLICLY OWNED SEWAGE-WATER-LANDFILL FACILITY means a sewage treatment facility, water delivery facility, or landfill gas control or processing facility, that is owned and operated by a public agency.

(19) QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN means a written document in which the specific procedures for the operation, calibration and maintenance of a certified CEMS are described in detail, including additional quality assurance assessments and the corrective action system. The purpose of this plan is to ensure that the CEMS generates, collects and reports valid data that is precise, accurate,

complete, and of a quality that meets the requirements, performance specifications, and standards of Rules 218.2 and 218.3.

(20) RECLAIM means the Regional Clean Air Incentives Market.

(21) RECLAIM FACILITY means a facility, or any of its successors, that was in the Regional Clean Air Incentives Market as of January 5, 2018, as established in Regulation XX.

(22) REFERENCE METHOD means the official test method employed by the South Coast AQMD to determine compliance with the rules or permit conditions. A list of reference methods is identified in Table 1.

(23) RELATIVE ACCURACY means the absolute mean difference between the gas concentration or emission rate determined by the CEMS and the value determined by the RM plus 2.5 percent error of confidence coefficient of a series of tests, divided by the mean of the RM tests.

(24) RELATIVE ACCURACY TEST AUDIT means the relative accuracy test expressed in terms of the ratio of the sum of the absolute mean difference between the CEMS-generated data and the value determined by the applicable reference method or applicable standard, and the absolute confidence coefficient, to the mean of the reference method or applicable standard value for concentration, flow, or mass emission rate. The calculation is based on raw measured data that are not corrected by diluent gas.

(25) RESPONSE TIME means the time interval from a step change in the air pollutant or gas diluent concentration to the time when 95 percent of the corresponding final value is reached as displayed on the CEMS data recorder or acquisition system. The response time is determined by introducing a certified gas mixture into the CEMS upstream of the sampling interface and as close to the probe inlet as practicable.

(26) SAMPLING INTERFACE means the part of the CEMS that performs sample acquisition using one or more of the following operations: extraction, physical/chemical separation, transportation, or conditioning of a representative sample from a designated unit.

(27) SEMI-CONTINUOUS EMISSION MONITORING SYSTEM (SCEMS) means an emission monitoring system that is different from a regular CEMS on response time and data acquisition frequency. SCEMS continuously takes and records measurements (e.g. concentration, mass

emission, flow rate) at a minimum of once in every fifteen (15) minutes. SCEMS includes but is not limited to gas chromatography, integrated sensitized tape analyzer, other sample integration based technologies, and time-shared CEMS.

(28) SPAN RANGE means the full range that is 0% to 100% of the data display output that a monitor component has been calibrated to measure.

(29) SYSTEM BIAS means the difference between the gas concentrations exhibited by the CEMS when a calibration gas is introduced at a location upstream of the sampling interface, and as close to the sampling probe inlet as practicable, and when the same calibration gas is introduced directly to the analyzer.

(30) TIME-SHARED CEMS means an emission monitoring system where the analyzer, and possibly the associated sample conditioning system, is used on more than one source. A time-shared CEMS is categorized as a type of SCEMS under Rules 218.2 and 218.3.

(31) UNIT means, for the purposes of this rule, a combustion source for which the continuous emission monitoring system, semi-continuous emission monitoring system, or alternative continuous emission monitoring system, monitors the source's emissions.

(32) UNIT OPERATING HOUR means a clock hour during which a unit combusts any fuel either for part of the hour or for the entire hour.

(33) UPPER SPAN VALUE means the upper range value of a span range that is 100% of the data display output that a monitor component has been calibrated to measure.

(34) ZERO GAS means a gas containing less than a specified amount of the pollutant or diluent gas which, when periodically injected into the CEMS, is used to check CEMS' response to the absence of the air pollutant or diluent gas.

(d) Implementation Schedule

(1) Prior to the implementation date specified in paragraphs (d)(2) to (d)(5), the owner or operator shall comply with:

(A) Rules 218 and 218.1 for a CEMS that is subject to paragraph (d)(2) or (d)(5); or

(B) Rule 2012 for a CEMS that is subject to paragraph (d)(3).

(2) For a CEMS certified to comply with Rules 218 and 218.1, the owner or operator of the CEMS shall meet the requirements of this rule no later than:

(A) The date an application is submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2;

(B) January 1, 2025, for any CEMS that was certified prior to January 1, 2022 but without an application submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for a CEMS recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2; or

(C) The implementation date of a source-specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2 as part of the implementation.

(3) For a CEMS certified to comply with Rule 2012, the owner or operator of the CEMS shall meet the requirements of this rule no later than:

(A) The date an application is submitted to the Executive Officer for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2 that is within twenty-four (24) months after the NOx RECLAIM facility has been notified as a former RECLAIM facility;

(B) Twenty-four (24) months after the NOx RECLAIM facility has been notified as a former RECLAIM facility, if there is no CEMS recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2 during this 24-month period; or

(C) The implementation schedule of a source specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2 as part of the implementation.

(4) If a CEMS that is subject to paragraph (d)(2) is sharing the sampling interface or other component(s) with another CEMS that is subject to paragraph (d)(3), the owner or operator of the CEMS shall meet the requirements of this rule based on the later implementation date determined by paragraphs (d)(2) and (d)(3).

(5) The owner or operator of a publicly owned sewage-water-landfill facility that has a CEMS certified to comply with Rules 218 and 218.1, shall meet the requirements of this rule no later than January 1, 2025, or the implementation date of a source-specific rule requiring the CEMS be certified or recertified, whichever is later.

(e) Pre-Certification Requirements

Prior to any certification, recertification, or relative accuracy test, the owner or operator of the CEMS shall meet all of the following standards:

(1) CEMS Location

The CEMS shall be installed at a location that enables measurements of air pollutant and diluent gas concentration, and flow rates are representative of the stack emissions of the unit.

(2) Sampling Location

(A) The monitoring system sampling probe tip and the reference method sampling port locations shall be determined according to the South Coast AQMD Method 1.1.

(B) The monitoring sampling probe shall be located where the sample obtained is representative of emissions.

(C) Each probe shall not interfere with any other probe when in use.

(D) The owner or operator may choose other sample locations subject to a written approval of the Executive Officer.

(E) If an alternate location is chosen as allowed in subparagraph (e)(2)(D) which does not conform with the South Coast AQMD Method 1.1:

(i) The absence of cyclonic flow for a stack flow monitor probe shall be demonstrated using the South Coast AQMD method 1.1, Section 2.4 in the Test Manual, Chapter X, Section 1.4 - "Alternative Site Selection Method", or 40 CFR, Part 60, Appendix A, Method 1, Section 11.4 – “Verification of Absence of Cyclonic Flow”; and

(ii) The absence of stratification shall be demonstrated using the South Coast AQMD method in the Test Manual, Chapter X, Section 13 - "Determination of Gaseous Constituent Stratification"; or

(iii) In the presence of stratification, alternatives to sampling site selection shall comply with the requirements specified in Attachment B section (C).

(3) Span Range

(A) The span range for air pollutant and diluent analyzers shall be set such that all data points are within 10 to 95 percent of the upper span value under normal operating conditions for the unit.

(B) For air pollutant analyzers:

(i) The upper span value shall be set between 150 and 200 percent of the concentration limit.

(ii) The upper span value may be set outside of the 150 to 200 percent of the concentration limit, but no lower than 120 percent, provided that:

(I) The owner or operator of the CEMS demonstrates that the span range will not be exceeded. Such demonstrations shall include, but not limited to, historical emissions data, historical process information, and historical operational information.

(II) A written approval from the Executive Officer shall be obtained prior to the upper span value being modified outside of the 150 to 200 percent of the concentration limit.

(C) If the owner or operator of the CEMS cannot meet both requirements specified in subparagraphs (e)(3)(A) and (e)(3)(B), the owner or operator of the CEMS shall be exempt from subparagraph (e)(3)(A), provided that the air pollutant analyzer is set at a span range approved by the Executive Officer that allows data points to fall at or below 10 percent of the upper span value.

(D) If an air pollutant analyzer monitors a unit with the concentration limit less than 5 ppm, the owner or operator of the CEMS shall be exempt from subparagraph (e)(3)(B), and the air pollutant analyzer shall be set at a span range approved by the Executive

Officer, provided that the approved upper span value for the analyzer is not higher than 10 ppm.

(E) The owner or operator of a CEMS analyzer with multiple span ranges shall set the span ranges for this analyzer pursuant to subparagraphs (e)(3)(A) through (e)(3)(D), for each span range or the combined span ranges, except for:

(i) The higher span range of a dual range analyzer; or

(ii) The highest span range of an analyzer with more than two span ranges.

(F) For diluent monitors, the span range shall be set such that the full range of oxygen and carbon dioxide concentrations can be measured. The upper span value shall be set at 25.0 percent O2 (maximum) and 1.0 percent CO2 (minimum) concentrations, or at a value approved by the Executive Officer.

(4) The Data Acquisition and Handling System (DAHS) of the CEMS shall meet the following requirements:

(A) Record data from monitored parameters at least once every minute for CEMS.

(B) Record data from monitored parameters at least once every 15 minutes for SCEMS.

(C) The acquisition rate shall be set at a constant rate such that the data points are equally spaced.

(D) The sample acquisition rate during certification and relative accuracy test audit(s) shall be the same as the sample acquisition rate during CEMS or SCEMS normal operation.

(E) Record all status codes specified in Table 2 for all data points.

(F) Utilize all valid data points to determine compliance with applicable limit(s), certification testing, and relative accuracy test audit(s).

(G) Incorporate all applicable data handling requirements specified in subdivision (i).

(5) Operational Period

The CEMS operational period prior to any certification tests shall be a minimum of 168 continuous hours.

(f) Certification Test Requirements and Specifications

The owner or operator of the CEMS shall perform a series of certification tests to demonstrate the acceptability of CEMS performance for a CEMS certification or recertification. Unless specified otherwise, the required certification tests and specifications shall, at a minimum, include the following:

(1) Seven-Day Calibration Drift Testing

The owner or operator of a CEMS shall perform a seven-day calibration drift test for each span range for pollutant analyzers, diluent analyzers, and stack flow monitors.

(A) A seven-day calibration drift test shall be comprised of a series of eight (8) calibration error tests during a seven-day period performed once each day with an interval of 24 hours plus a 2-hour grace period for each test, when the CEMS is in continuous operation.

(B) Each calibration error test shall be performed for:

(i) Pollutant and diluent analyzers, at the low and high ranges, which is at 0 to 20, and 80 to 100 percent of the upper span value; and

(ii) Stack flow monitors, by introducing a zero-reference value to the transducer or transmitter.

(C) Calibration error for each calibration error test during the entire testing period, as calculated using Equation 1 in Table 3, shall not exceed:

(i) 2.5 percent of the upper span value for pollutant and diluent analyzers, and

(ii) 3.0 percent of the upper span value for stack flow monitors.

(2) Analyzer Enclosure

(A) The analyzer shall be contained in an environmentally controlled enclosure and equipped with an alarm and temperature recording device that provides an audible alert that the temperature drift for the analyzer enclosure exceeds the manufacturer's recommended specifications. The owner or operator of the CEMS shall make corrective actions within 8 hours of receiving the audible alert.

(B) In lieu of subparagraph (f)(2)(A), the owner or operator of the CEMS shall perform the 2-hour calibration error tests in meeting

the analyzer enclosure requirement, provided that the 2-hour calibration error is performed:

(i) Once every two hours as close to 2-hour intervals as practicable, with total of thirteen consecutive tests performed;

(ii) When ambient temperature is expected to vary diurnally at least 30 degree Fahrenheit (^{o}F); and

(iii) At the low and high ranges, which is at 0 to 20, and 80 to 100 percent of each span range respectively.

(iv) With calibration error meeting the requirements specified under subparagraph (f)(1)(C).

(C) The owner or operator of the CEMS shall be exempt from subparagraph (f)(2)(A), provided that the CEMS is located:

(i) In a geographic area where seasonal high and low temperatures do not exceed the operational temperature specifications for the analyzer;

(ii) In a geographic area where monthly maximum temperature variation is less than 30^{o}F for all months of the year; and

(iii) The CEMS is located in a site that is protected from radiation and convection heating sources.

(3) Relative Accuracy Test Audit

The owner or operator of a CEMS shall perform a relative accuracy test audit for pollutant concentration that is not corrected by diluent gas, O2/CO2 diluent gas concentration, stack flow, and mass emission rate, whichever is applicable to the CEMS, in the as-found unit operating condition.

(A) There shall be a minimum of nine sets of test data generated.

(B) If the number of tests exceeds nine sets, data may be discarded if it is identified as an outlier according to the South Coast AQMD Technical Guidance Document R-004 (TGD R-004), or for valid reasons (e.g., process upsets, CEMS malfunction, etc.) which must be substantiated with appropriate documentation and subject to approval by the Executive Officer.

(C) The relative accuracy shall be calculated according to Equation 4 in Table 3 and expressed as a percentage.

(D) Alternatively, a *de minimis* value shall be determined according to Equation 5, Equation 6, and Equation 7 in Table 3 for pollutant/diluent gas, stack flow, and mass emission respectively.

(E) The owner or operator of the CEMS shall meet the following relative accuracy or *de minimis* value (no more than):

(i) For pollutant concentrations, a relative accuracy of 20.0 percent of the mean value of the reference method, or the *de minimis* concentration as follows:

Pollutant	*De minimis*
NOx	0.5 ppm (or 1.0 ppm when the rule or permitted concentration limit for the unit is higher than 5.0 ppm)
SO_2	2.0 ppm
CO	2.0 ppm (or the rule or permitted concentration limit for the unit when it is lower than 2.0 ppm)
Reduced Sulfur Compounds	4.0 ppm

(ii) For diluent concentrations, a relative accuracy of 10.0 percent of the mean value of the reference method, or a relative accuracy of 20.0 percent when the measured diluent gas, O2 or CO2, is at or below 15 percent, or the *de minimis* value of 1.0 percent diluent gas.

(iii) For stack flow monitoring systems including stack flow monitors and fuel flow measuring devices in conjunction with F-factor in determining stack flow, a relative accuracy of 15.0 percent of the mean value of the reference method, or the *de minimis* value when the mean stack gas velocity obtained by the reference method test is less than 15 feet per second.

(iv) For mass emission rates, a relative accuracy of 20.0 percent of the mean value of the reference method for

mass emission rates, or the *de minimis* value when the mean stack gas velocity obtained by the reference method test is less than 15 feet per second.

(4) Within fourteen days of a relative accuracy test audit, the owner or operator of the CEMS shall demonstrate compliance with the following requirements:

(A) Response Time

(i) The response time for CO CEMS shall not exceed 1.5 minutes except where there is a technical limitation, in which case the response time shall be 5 minutes; and

(ii) The response time for all other CEMS and stack flow monitoring system shall not exceed 5 minutes.

(B) NOx Converter Efficiency

NOx converter efficiency test shall be conducted to indicate an average converter efficiency greater than 90 percent.

(C) Sampling System Bias Check

(i) The CEMS system bias shall not exceed 5.0 percent of each upper span range for pollutant analyzers.

(ii) The owner or operator of the CEMS shall include in the facility QA/QC Plan, criteria for excessive drift (e.g. control limits on cumulative drift) and appropriate diagnostic techniques to identify sources of analyzer drift and system bias when control limits are exceeded.

(D) Concentration Stratification

The owner or operator of the CEMS shall demonstrate the absence of stratification and locate the CEMS probe in accordance with Attachment B.

(E) Cyclonic Flow

If the CEMS determines mass emission rate, the owner or operator of the CEMS shall perform the cyclonic flow test pursuant to clause (e)(2)(E)(i).

(F) Linearity Error for Pollutant and Diluent Gas Analyzers

(i) A linearity error test shall be comprised of three tests for each span range.

(ii) Each test shall be performed by introducing calibration gas into the CEMS at the low, middle and high ranges, which are 20 to 30, 50 to 60, and 80 to 100 percent of the upper span value respectively.

(iii) The same calibration gas shall not be used twice in succession during the linearity error tests.

(iv) Linearity error shall not exceed 5.0 percent of the calibration gas concentration, as calculated pursuant to Equation 3 in Table 3.

(v) In lieu of the requirement as specified in clause (f)(4)(F)(iv), for a pollutant analyzer with an upper span value less than or equal to 5 ppm, linearity error shall not exceed 5.0 percent of the upper span value, as calculated pursuant to Equation 3a in Table 3.

(5) Alternative Emission Monitoring System (ACEMS)

(A) In lieu of certifying a CEMS according to the requirements specified in paragraphs (f)(1) through (f)(4), the owner or operator shall request the Executive Officer to certify an alternative emission monitoring system that is at a minimum equivalent in relative accuracy, precision, reliability, and timeliness to a CEMS for that unit, according to the criteria specified in 40 CFR Part 75 Subpart E.

(B) Substitute criteria is acceptable if the applicant demonstrates to the satisfaction of the Executive Officer that the proposed alternative monitoring device is at minimum equivalent in relative accuracy precision, reliability, and timeliness to a CEMS for that unit.

(C) Upon approval by the Executive Officer, the substitute criteria specified in subparagraph (f)(5)(B) shall be submitted to the federal Environmental Protection Agency as an amendment to the State Implementation Plan (SIP).

(6) All certification tests shall be performed by testing firms/laboratories who have received approval through the South Coast AQMD's laboratory approval program.

(g) Quality Assurance Testing Requirements and Specifications

After completing the certification testing pursuant to subdivision (f), the owner or operator of the CEMS shall operate and maintain the CEMS according to the following quality assurance testing requirements and specifications, for all applicable analyzer span ranges of the CEMS, unless otherwise specified.

(1) Calibration Error

The owner or operator of a CEMS shall perform the calibration error test for pollutant analyzers, diluent analyzers, and stack flow monitors. The calibration error test is not applicable to an ACEMS or a fuel flow measuring device in conjunction with F-factor in determining stack flow.

(A) A calibration error test shall be performed for:

(i) Pollutant and diluent analyzers, for every 24 hours with a 2-hour grace period during which emissions are generated, at the low (0 to 20 percent) and high (80 to 100 percent) of the upper span value of each span range that has recorded data since the last calibration error test; and

(ii) Stack flow monitors, for every 14-day period during which emissions flow through the stack, by introducing a zero reference value to the transducer or transmitter

(B) A calibration error test shall be performed within 4 hours of the unit restart and normal operation, if the unit restart is after a period longer than the testing cycle specified in subparagraph (g)(1)(A) when no emissions are generated.

(C) A successful calibration error test, with the calibration error calculated using Equation 1 in Table 3, shall not exceed two times the calibration error specification in subparagraph (f)(1)(C) for each range.

(D) Any calibration error test result, which does not exceed two times the calibration error specification in subparagraph (f)(1)(C) but is greater than the specification in subparagraph (f)(1)(C), shall be addressed by the QA/QC Plan for possible remediation.

(E) Data recorded by the CEMS pollutant and diluent analyzers are validated for 26 clock hours (i.e., 24 hours plus a 2-hour grace period) beginning from the hour of completing a successful calibration error test, and either ending after 26 hours, or ending

at the hour of failing any quality assurance test specified under subdivision (g) within the 26-hour period.

(F) Data recorded by the CEMS at the unit restart that are prior to the hour of completing a successful calibration error test are validated starting from the hour of unit restart, if the owner or operator of the CEMS conducts a successful calibration error test in accordance with subparagraphs (g)(1)(B) and (g)(1)(C).

(2) Relative Accuracy Test Audit

The owner or operator of the CEMS shall conduct the relative accuracy test audit for pollutant concentration that is not corrected by diluent gas, O2/CO2 diluent gas concentration, stack flow, and emission rate, whichever is applicable to the CEMS.

(A) A relative accuracy test audit shall be performed annually no later than the end of the calendar quarter of the previous relative accuracy test, in the as-found unit operating condition.

(B) During any relative accuracy test audit, the owner or operator shall comply with all the requirements in paragraphs (f)(3) and (f)(4), except that the owner or operator of the CEMS:

(i) Is not required to conduct linearity error check.

(ii) May request a waiver from stratification and cyclonic flow requirements specified in subparagraphs (f)(4)(D) and (f)(4)(E) respectively, by submitting to the Executive Officer, for approval, any applicable documentation or previous test or historical data that meets the stratification and cyclonic flow requirements.

(C) The CEMS shall meet the relative accuracy or *de minimis* standards as specified in paragraph (f)(3).

(D) If the unit for which the CEMS is certified to monitor is not operating or generating emissions when a relative accuracy test audit is due, the relative accuracy testing audit shall be performed within 14 days after the unit is restarted and resumes normal operation.

(3) Cylinder Gas Audit for Pollutant and Diluent Gas Analyzers

(A) The owner or operator of the CEMS shall conduct a cylinder gas audit:

(i) For every calendar quarter when relative accuracy test audit is not conducted, but in no more than three quarters in succession;

(ii) According to the provisions of 40 CFR 60, Appendix F; and

(iii) Using calibration gas as specified in subdivision (h).

(B) The owner or operator of the CEMS is not required to conduct the cylinder gas audit for a calendar quarter when it is due, provided that within that calendar quarter:

(i) The CEMS has passed a linearity error check according to subparagraph (f)(4)(F) or the provisions of 40 CFR 75, Appendix A; or

(ii) The accumulative unit operating hours are no more than 168 hours.

(4) The owner or operator of an ACEMS shall conduct:

(A) Daily checks with the ACEMS modeling software to:

(i) Verify that the emission values generated by the ACEMS modeling software are consistent as certified, given specific parameter inputs;

(ii) Perform the daily check pursuant to the same schedule specified in clause (g)(1)(A)(i) and subparagraph (g)(1)(B); and

(iii) Validate the same time period as defined in subparagraph (g)(1)(E) with a successful daily check.

(B) Periodic calibrations of the sensors pursuant to manufacturer's specifications for each component.

(5) The owner or operator of a stack flow monitor shall conduct:

(A) Daily flow monitor interference checks, according to the same schedule as specified in clause (g)(1)(A)(i) and subparagraph (g)(1)(B), with each interference check validating the same time period as specified in subparagraph (g)(1)(E); and

(B) A leak detection check no later than the end of each calendar quarter, if the stack flow is determined by a differential pressure flow monitor.

(6) The owner or operator of a fuel flow measuring device in conjunction with F-factor in determining stack flow shall:

(A) Maintain the fuel flow measuring device in accordance with the manufacturer's recommendation; and

(B) Include the maintenance schedule and activities in the CEMS QA/QC plan.

(h) Calibration Gas and Zero Gas

(1) For the purpose of Rules 218.2 and 218.3, the owner or operator of the CEMS shall ulitilize the calibration gas identified in the following:

(A) U.S. EPA Protocol Gas that are calibration gas mixtures manufactured, analyzed and certified in accordance with the Section 2 "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards" - EPA-600/R-12/531, May 2012, or U.S. EPA's the most recently published protocol for certification of gaseous certification standards.

(B) National Institute of Standards and Technology (NIST) Standard Reference Materials (SRM).

(C) NIST Standard Reference Material-Equivalent Compressed Gas Primary Reference Materials that are calibration gas mixtures listed in a declaration of equivalence in accordance with subparagraph (h)(1)(A).

(D) NIST Traceable Reference Materials that are calibration gas mixtures tested by and certified by NIST to have a certain specified concentration of gases. NIST Traceable Reference Materials may have different concentrations from those of standard reference materials.

(E) NIST/EPA-approved certified reference materials (CRM) that are calibration gas mixtures approved by U.S. EPA and NIST as having specific known chemical or physical property values certified by a technically valid procedure as evidenced by a certificate or other documentation issued by a certifying standard-setting body.

(F) For gas calibration standards not covered by programs specified in subparagraphs (h)(1)(A) through (h)(1)(E), the owner or

operator of the CEMS shall obtain the Executive Officer's approval for using any of the following alternatives:

(i) The Manufacturer of Calibration Gas' Intermediate Standard that is a compressed gas calibration standard assayed and certified by direct comparison to a calibration gas identified under subparagraph (h)(1)(B), (h)(1)(C), (h)(1)(D), or (h)(1)(E), in accordance with Section 2.1.3.1 of the "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards" - EPA-600/R-12/531, May 2012, or U.S. EPA's the most recently published protocol for certification of gaseous certification standards;

(ii) NIST Research Gas Mixture that is a calibration gas mixture developed by agreement of a requestor and NIST that NIST analyzes and certifies as "NIST traceable"; or

(iii) The manufacturer of calibration Gas' alternative certification protocol for the specific compound or compounds subject to the Executive Officer's approval.

(I) The procedures of the U.S. EPA Protocol shall be used for gas calibration standards, except that the manufacturer of calibration gas must identify a recertification period and submit data documenting the applicability of this period. The manufacturer of calibration gas may submit alternative performance standards for calibration gas certification and recertification, based on supporting technical data also provided by the manufacturer of calibration gas.

(II) If there is no existing National Institute of Standards and Technology (NIST) standard for the measured parameter, the manufacturer of calibration gas may submit an alternative reference standard and the supporting technical

data that define the stability, accuracy, and precision of the alternative reference standard.

(III) The owner or operator of the CEMS may submit an alternative protocol to the U.S. EPA Protocol, provided that the owner or operator of the CEMS demonstrates through supporting technical data that the procedures therein are not applicable to the constituent in the calibration gas standard being certified.

(G) Compressed and/or filtered air, such as instrument air, may also be used instead of oxygen span gas provided that the owner or operator demonstrates, to the satisfaction of the Executive Officer, that it is of equivalent quality to the calibration gas standards above. As part of such documentation, the owner or operator shall include in their QA/QC plan the process or operation in producing such compressed and/or filtered air and periodically checking that compressed air and/or filtered air continues to meet the calibration gas standards.

(2) Zero Gas

The owner or operator of the CEMS shall ulitilize zero gases meeting the following criteria:

(A) For gaseous air pollutant monitors, the zero gas shall be certified by the manufacturer to contain no more than 0.1 ppm of the air pollutant analyzed by the subject monitor or 1.0 percent of the applicable standard, whichever is less.

(B) For carbon monoxide monitors, the zero gas shall be certified by the manufacturer to contain less than 0.5 ppm carbon monoxide or 1.0 percent of the applicable standard, whichever is less.

(C) For carbon dioxide and oxygen monitors, the zero gas shall be certified by the manufacturer to contain less than 1.0 ppm carbon dioxide or oxygen.

(D) Compressed and/or filtered air, such as instrument air, may also be used instead of zero gas provided that the owner or operator demonstrates, to the satisfaction of the Executive Officer, that it is of equivalent quality to the above zero gas standards. As part

of such documentation, the owner or operator shall include in their QA/QC plan the process or operation in producing such compressed and/or filtered air and periodically checking that compressed air and/or filtered air continues to meet the zero gas standards.

(i) Data Handling

(1) Data Points Below 10 Percent of the Upper Span Value

If a data point falls below 10 percent of the upper span value, the owner or operator of the CEMS shall record and report that data point according to the following:

(A) For a CEMS analyzer with certified single span range, the owner or operator of the CEMS shall report any data point that falls below 10 percent of the upper span value, at the 10 percent value of the upper span value.

(B) For a CEMS analyzer with certified multiple span ranges, the owner or operator of the CEMS shall report a data point at:

(i) Ten (10) percent of the upper span value of the higher span range if the data point is below 10 percent of the upper span value of the higher span range but above 95 percent of the upper span value of the lower span range.

(ii) Ten (10) percent of the upper span value of the:

(I) Lower span range if the data point is below 10 percent of the upper span value of the lower span range for a dual range analyzer; or

(II) Lowest span range if the data point is below 10 percent of the upper span value of the lowest span range for an analyzer with more than two span ranges.

(iii) The monitored value if the data point is within 10 to 95 percent of the upper span value of any span range.

(C) In lieu of subparagraphs (i)(1)(A) and (i)(1)(B), in the event that any data point falls below 10 percent of the upper span value of the span range that is the lowest vendor guaranteed span range for that CEMS analyzer, the owner or operator of the CEMS shall report the data point at:

(i) Ten (10) percent of the upper span value; or

(ii) The actual measured value, provided that the CEMS meets the Supplemental and Alternative Performance Requirements that are specified in Attachment A of this rule.

(D) Data points recorded and reported pursuant to clause (i)(1)(A) and subparagraphs (i)(1)(B) and (i)(1)(C)(i), shall be flagged as below 10 percent of the upper span value for CEMS status code.

(2) Data Points Above 95 Percent of the Upper Span Value

If a data point is above 95 percent of the upper span value , the owner or operator of the CEMS shall record and report the data point according to the following:

(A) For a CEMS analyzer with certified single span range, the permit holder and operator of the CEMS shall record any data point that is above 95 percent of the upper span value, at the 95 percent of the upper span value.

(B) For a CEMS analyzer with certified multiple span ranges, the owner or operator of the CEMS shall report the data point at:

(i) Ten (10) percent of the upper span value of the higher span range if the data point is below 10 percent of the upper span value of the higher span range but above 95 percent of the upper span value of the lower span range.:

(ii) Ninety-Five (95) percent of the upper span value of:

(I) The higher span range if it is above 95 percent of the upper span value of the higher span range for a dual range analyzer; or

(II) The highest span range if it is above 95 percent of the upper span value of the highest span range for an analyzer with more than two span ranges.

(iii) The monitored value if the data point is within 10 to 95 percent of the upper span value of any span range.

(C) The owner or operator of the CEMS shall:

(i) Flag any data point that is recorded and reported pursuant to clause (i)(2)(A) and subparagraph (i)(2)(B)(ii) as

above 95 percent of upper span value for CEMS status code; and

(ii) Calculate a spiking data percentage for each calendar quarter using the following equation:

Spiking Data Percentage = F/T x 100%

Where:

F is the numberof flagged one-minute data points recorded pursuant to clause (i)(2)(C)(i) for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit; and

T is the total numberof one-minute data points recorded for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit.

(D) The owner or operator of a CEMS shall submit a CEMS application within 30 days to certify an additional span range, if in any consecutive four calendar quarter period, there are two calendar quarters that for each quarter:

(i) The percentage determined pursuant to clause (i)(2)(C)(ii) is over 1.0 percent; and

(ii) The total unit operating hours for the quarter are more than 50 hours.

(3) If the owner or operator of a certified CEMS is meeting the quality assurance requirements as specified in subdivision (g), data recorded and reported pursuant to paragraphs (i)(1) and (i)(2) shall be valid data for quantification, and available for the purpose of determining CEMS data availability.

(4) Emission Data Averaging

The owner or operator of the CEMS shall perform emission data averaging according to the following methods:

(A) An hourly average shall cover the 60-minute period commencing on the hour. An hourly average shall be computed as follows utilizing all valid data points:

(i) For a full or partial unit operating hour, at least one valid data point in each 15-minute quadrant of the hour in which the unit operates is required to calculate the hourly average.

(ii) For any unit operating hour in which required maintenance or quality-assurance activities are performed:

(I) If the unit operates in two or more quadrants of the hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourly average; or

(II) If the unit operates in only one quadrant of the hour, at least one valid data point is required to calculate the hourly average.

(B) For continuous monitoring systems used to demonstrate compliance for a 15-minute interval, emission data may be averaged for each 15-minute quadrant of the hour in which the unit operates, utilizing all valid data points.

(C) For continuous monitoring systems used to demonstrate compliance for an interval greater than one-hour, emission data may be averaged for the required interval utilizing hourly averages computed in accordance with subparagraph (i)(4)(A).

(D) Pollutant concentration correction by diluent gas shall be performed with the averaged value at the interval required for compliance demonstration.

(E) Comparable emission data average requirements specified in source specific rules or permit conditions shall supersede subparagraphs (i)(4)(A) through (i)(4)(D).

(5) CEMS Data Availability

(A) On a quarterly basis, the owner or operator of the CEMS shall calculate data availability for each analyzer using the following equation:

Data Availability = Y/Z x 100%

Where:

Y is the total unit operating hours during the calendar quarter when the monitor provided data, excluding the operating hours identified under subparagraph (i)(5)(B) and CEMS out-of-control period specified under subparagraph (i)(6)(A); and
Z is the total unit operating hours during the calendar quarter, excluding the operating hours identified under subparagraph (i)(5)(B).

(B) An operating hour that includes any of the following periods shall be excluded from the data availability calculation:

(i) Startup and shutdown period that is not subject to any emission limit according to the permit condition or source specific rule;

(ii) CEMS maintenance, repair, or audit for up to 30 hours for each calendar quarter; and

(iii) A unit Breakdown that meets all Breakdown provisions of Rule 430 and is deemed as a valid Breakdown.

(C) CEMS data availability threshold and subsequent requirements

(i) When data availability of any analyzer falls below 95 percent for one calendar quarter, the owner or operator of the CEMS shall:

(I) Conduct a relative accuracy test audit within 45 days after the end of the calendar quarter with data availability below 95 percent, unless another relative accuracy test audit is scheduled for the same calendar quarter in compliance of any other rule or permit requirement; and

(II) Report the incident and corrective actions in the semi-annual report pursuant to Rule 218.2 (h)(1) for the period covering that calendar quarter.

(ii) When data availability of any analyzer falls below 95 percent for two consecutive calendar quarters, the owner or operator of the CEMS shall:

(I) Within 30 days after the end of those two consecutive calendar quarters, provide a

temporary alternative monitoring method identified in subparagraph (i)(7); and

(II) Within 180 days after the end of those two consecutive calendar quarters, modify or replace the CEMS, and recertify the CEMS.

(iii) The Executive Officer may request the owner or operator of the CEMS to revise the QA/QC plan whenever data availability of any analyzer falls below the 95 percent threshold.

(6) CEMS Out-of-Control Period

(A) A CEMS out-of-control period:

(i) Occurs when the owner or operator fails any QA/QC test specified under subdivision (g), or fails to conduct the test when it is due; Notwithstanding, for a publicly owned sewage-water-landfill facility, if the QA/QC test fails based on a calibration error test, the CEMS out-of-control period shall be determined in accordance with the applicable provision(s) of the Code of Federal Regulations, Title 40 – "Protection of Environment", Part 60 – "Standards of Performance for New Stationary Sources", Appendix F – "Quality Assurance Procedures".

(ii) Begins with the hour of completion of the failed test(s), or the hour when it becomes overdue, and ends with the hour of completion of a passing test.

(B) The CEMS data generated during the CEMS out-of-control period shall be deemed invalid for emission quantification in any compliance demonstration

(C) The CEMS during the CEMS out-of-control period shall be considered unavailable for the data availability calculation.

(7) Alternative Data Aquisition

The owner or operator of the CEMS may choose from the following options for alternative data acquisition for any period when the certified CEMS does not provide valid data. Data generated by the alternative

options shall be considered valid for emission quantification, and quality-assurance for the data availability calculation.

(A) South Coast AQMD Method 100.1 in conjunction with South Coast AQMD Methods 1.1, 2.1, 3.1, and 4.1, or South Coast AQMD Method 100.1 in conjunction with South Coast AQMD Method 3.1 and EPA Method 19.

(B) A standby CEMS (such as in a mobile van or other configuration), if:

(i) The standby CEMS has been certified by the South Coast AQMD as being equivalent to the corresponding permanently installed CEMS on relative accuracy, reliability, reproducibility, and data handling based upon the approval of a submitted standby CEMS plan;

(ii) The use of the certified standby CEMS does not exceed a total of 6 months for any unit(s) within a calendar year;

(iii) The owner or operator of the CEMS has notified the Executive Officer within 24 hours of the replacement use of the certified standby CEMS;

(iv) During the first 30 days of the use of the certified standby CEMS, the owner or operator has conducted a Cylinder Gas Audit (CGA) of the standby CEMS;

(v) The owner or operator of the CEMS shall notify the Executive Officer within the 30-day period if the standby CEMS shall be used longer than 30 days; and

(vi) After the first 30 days of using the standby CEMS, the owner or operator of the CEMS shall conduct at least one relative accuracy test audit of the standby CEMS and the relative accuracy test audit shall be conducted within 90 days of the initial use of the standby CEMS. This test shall be performed by testing firms/laboratories who have received approval from the South Coast AQMD through its Laboratory Approval Program.

(C) An alternative data acquisition method approved by the Executive Officer as equivalent to a South Coast AQMD

certified CEMS on relative accuracy, reliability, reproducibility, and data handling.

(8) Automatic Calibration Data

If automatic adjustments to the monitor settings are made, the owner or operator shall conduct the calibration tests in a way that the magnitude of the adjustments can be determined and recorded.

(9) F-Factors

The owner or operator of the CEMS shall use in the CEMS calculations the F-factors listed in 40 CFR Part 60, Appendix A, Method 19, Table 19-2, as applicable. Alternatively, the owner or operator may submit a plan for Executive Officer's approval to develop F-factors for fuels not listed in Method 19, Table 19-2.

(j) SCEMS Requirements

(1) The owner or operator of a SCEMS shall:

(A) Comply with the pre-certification and certification requirements pursuant to subdivisions (e) and (f), except for the requirements on response time specified in subparagraph (f)(4)(A), where the response time for any SCEMS shall not exceed 15 minutes;

(B) Comply with the quality assurance requirements specified in subdivision (g);

(C) Comply with the data handling requirements pursuant to subdivision (i); and

(D) Use 15-minute data points instead of one-minute data points for the calculation required by subparagraph (i)(2)(C).

(2) The owner or operator of a time-shared CEMS shall meet all the following additional requirements for the time-shared CEMS:

(A) All units shall have mutually compatible range(s) of air pollutant gases at all times.

(B) Each unit shall have a data-reading period, at a minimum, equal to three times the longest response time of the system.

(C) For shared systems the response time shall be measured at the input or probe at each unit.

(D) A demonstration of response time for each unit shall be made during certification testing.

(E) Data shall not be collected following a switch of sample unit until a period of time equal to one response time has passed.

(F) Data shall be recorded every 15 minutes for each unit.

(G) Perform and record zero and span calibrations for each unit, including the calibration factors and correction values before and after every automatic calibration.

(H) Uniquely identify each unit on the DAHS.

(k) Moisture Correction

(1) If a moisture correction in reporting flow and concentration is required, the owner or operator of a CEMS shall measure and monitor moisture in the stack gas used for emission data calculations in accordance with the South Coast AQMD Technical Guidance Document R-001(TGD-R-001).

(2) Alternatively, with Executive Officer approval, for equipment moisture that emanates only from fuel combustion, the owner or operator of the CEMS shall calculate the moisture content using fuel properties and ambient air humidity data or, for processes that saturate the exhaust gas with moisture, such as a wet scrubber system, the owner or operator shall use the saturation temperature for moisture content data

(l) Exemption

(1) If a rule or permit specify CEMS requirements that are different than requirements specified in Rule 218.3, the owner or operator shall adhere to CEMS requirements in the rule or permit, unless otherwise notified by the Executive Officer.

Table 1
REFERENCE METHODS
RULE 218.3

South Coast AQMD Method 1.1 - Sample and Velocity Traverses for Stationary Sources

South Coast AQMD Method 1.2 - Sample and Velocity Traverses for Stationary Sources with Small Stack or Ducts

South Coast AQMD Method 2.1 - Determination of Stack Gas Velocity and Volumetric Flow Rate (S-type Pitot tube)

South Coast AQMD Method 2.2 - Direct Measurement of Gas Volume through Pipes and Small Ducts

South Coast AQMD Method 2.3 - Determination of Gas Velocity and Volumetric Flow Rate from Small Stacks or Ducts

South Coast AQMD Method 3.1 - Gas Analysis for Dry Molecular Weight and Excess Air

South Coast AQMD Method 4.1 - Determination of Moisture Content in Stack Gases

South Coast AQMD Method 6.1 - Determination of Sulfuric Acid and Sulfur Oxides from Stationary Sources

South Coast AQMD Method 7.1 - Determination of Nitrogen Oxide Emissions for Stationary Sources

South Coast AQMD Method 100.1 - Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling

South Coast AQMD Method 307.91 - Determination of Sulfur in a Gaseous Matrix

South Coast AQMD Method 10.1 – Determination of Carbon Monoxide, Carbon Dioxide, and Oxygen by Gas Chromatograph

EPA Method 6 - Determination of Sulfur Dioxide Emissions from Stationary Sources

EPA Method 19 - Determination of Sulfur Dioxide Removal Efficiency and Particulate, Sulfur Dioxide and Nitrogen Oxides Emission Rates from Electric Utility Steam Generator (40 CFR Part 60 Appendix A)

ASTM D4294 – 03 Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry

ASTM D2622 – 05 Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry

Table 2
Data Acquisition and Handling System (DAHS) Status Codes
RULE 218.3

Status Code for the Following Parameters (True as 1 and False as 0)
Valid data point
Calibration
Monitoring system off-line
Alternative data acquisition
CEMS out-of-control
Fuel switch
10% of upper span value[1] (concentration reported at 10% of upper span value when the monitored value was below 10% of upper span value)
Lower than 10% of upper span value[1] (Concentration reported at the actual monitored value when the monitored value was below 10% of upper span value)
Above 95% of upper span value[2]
Unit non-operational

1. 10% of upper span value of the lower span range for dual range analyzer or the lowest span range for multiple range analyzer
2. 95% of upper span value of the higher span range for dual range analyzer or the highest span range for multiple range analyzer

Table 3
Equations
RULE 218.3

Test	Eq. #	Equation	Where:
Calibration Error	1	$CE = \frac{\lvert C - A \rvert}{SR} \times 100$	C = Calibration gas concentration A = Actual response or the concentration indicated by the monitoring system SR = Upper span value of the instrument
Confidence Coefficient	2	$CC = t_{0.975} \frac{S_d}{\sqrt{n}}$	S_d = Standard deviation n = Number of data in a series of tests $t_{0.975}$ = t-value (see Table 4 below for t-Values)
Linearity Error	3	$LE = \frac{\lvert R - \overline{C} \rvert}{R} \times 100$	$\overline{C}$ = Mean of the CEMS response values R = Certified gas concentration as reference value
Linearity Error - For air pollutant analyzer with a span range at or below 5 ppm	3a	$LE = \frac{\lvert R - \overline{C} \rvert}{SR} \times 100$	$\overline{C}$ = Mean of the CEMS response values R = Certified gas concentration as reference value SR = Upper span value of the instrument
Relative Accuracy Test Audit – Relative Accuracy	4	$RA = \frac{\lvert \overline{d} \rvert + \lvert CC \rvert}{\overline{RM}} \times 100$	$\lvert \overline{d} \rvert$ = Absolute value of the mean difference |CC| = Absolute value of the 95% confidence coefficient $\overline{RM}$ = Average reference method value
Relative Accuracy Test Audit – *de minimis (Pollutant/Diluent Gas)*	5	$\lvert \overline{d} \rvert + \lvert CC \rvert$	$\lvert \overline{d} \rvert$ = Absolute value of the mean difference |CC| = Absolute value of the 95% confidence coefficient

Table 3
Equations - continued
RULE 218.3

Test	Eq. #	Equation	Where:
Relative Accuracy Test Audit – *de minimis (Stack Flow Monitoring System)*	6	$\|d\|+\|cc\| \leq 2$ feet per second x A x cf	|d| = Absolute value of the mean difference in units of standard cubic feet per hour. |cc| = Absolute value of the 95% confidence coefficient A = Stack cross sectional area in the plane of measurement. cf = Conversion factor to standard cubic feet per hour.
Relative Accuracy Test Audit – *de minimis (Mass Emission Rate)*	7	$\|d\|+\|cc\| \leq (c \times s \times A) \times cf$	|d| = Absolute value of the mean difference in units of standard cubic feet per hour. |cc| = Absolute value of the 95% confidence coefficient c = Pollutant *de minimis* or mean concentration obtained by reference test method, whichever is greater. s = 2 feet per second or mean stack gas velocity obtained by reference test method, whichever is greater. A = Stack cross sectional area in the plane of measurement. cf = Conversion factor to pounds per hour.
The Mean Difference $\bar{d}$	8	$\bar{d} = \frac{1}{n}\sum_{i=1}^{n} d_i$	$\sum_{i=1}^{n} d_i$ = Algebraic sum of the individual differences di n = Number of data points di = The difference between the reference method value and CEMS value, both in units of the applicable standard

Table 4
t-Values*
RULE 218.3

N	$t_{0.975}$	n	$t_{0.975}$	n	$t_{0.975}$
2	12.706	7	2.447	12	2.201
3	4.303	8	2.365	13	2.179
4	3.182	9	2.306	14	2.160
5	2.776	10	2.262	15	2.145
6	2.571	11	2.228	16	2.131

* The t-values in this table are already corrected for n-1 degrees of freedom. Use n equal to the number of data points.

ATTACHMENT A

SUPPLEMENTAL AND ALTERNATIVE CEMS PERFORMANCE REQUIREMENTS

A. Applicability of Supplemental and Alternative Performance Requirements

The owner or operator of the CEMS electing (or who may be required) to measure concentrations that fall below 10 percent of the upper span value of the lowest vendor guaranteed span range, shall satisfy the performance requirements as specified in Table A-1 listed below.

TABLE A-1
Alternative Performance Requirement(s)

CEMS Certified per Rule 218.1 Yes or No	Performance Requirement(s)			
	LLSR/BFD	HLSR/BFD	LLR/BFD	LLCE
Yes	x		+	x
No	x	x	+	x

1. + (plus) denotes an additional performance requirement that shall be conducted if the mandatory performance requirement(s) cannot be met.

2. If the concentration of the CEMS is such that the specifications for the low level spike recovery/bias factor determination cannot be met, the owner or operator of the CEMS shall conduct a low level RATA/bias factor determination.

3. Abbreviations used in this Attachment are:

   Low Level Spike Recovery/Bias Factor Determination (LLSR/BFD)
   High Level Spike Recovery/Bias Factor Determination (HLSR/BFD)
   Low Level RATA/Bias Factor Determination (LLR/BFD)
   Low Level Calibration Error (LLCE)
   Relative Accuracy Test Audit (RATA)
   Relative Accuracy (RA)
   National Institute of Standards Traceability (NIST)

B. Test Definitions, Performance Specifications and Test Procedures

This section explains in detail how each performance requirement is to be conducted.

1. Low Level Calibration Error

The low level calibration error test is defined as challenging the CEMS (from probe to monitor) with certified calibration gases (e.g., NO in N2) at three levels in the 0-20 percent of the upper span value. Since certified gas mixtures or standards may not be available at the concentrations required for this test, gas dilution systems may be used, with the Executive Officer's approval, if they are used according to either the South Coast AQMD or EPA protocols as specified in Rule 218.1, for the verification of gas dilution systems in the field. The CEMS high-level calibration gas may be diluted for the purpose of conducting the low level calibration error test.

a. Performance Specifications
Introduce pollutant concentrations at approximately the 20 percent, 10 percent, and 5 percent of the upper span value through the normal CEMS calibration system. No low level calibration error shall exceed 2.5 percent of the upper span value.

b. Testing Procedures

i. Perform a standard zero/span check; if zero or span check exceeds 2.5 percent of the upper span value, adjust monitor and redo zero/span check.

ii. After zero/span check allow the CEMS to sample stack gas for at least 15 minutes.

iii. Introduce any of the low level calibration error standards through the CEMS calibration system.

iv. Read the CEMS response to the calibration gas starting no later than three system response times after introducing the calibration gas; the CEMS response shall be averaged for at least three response times and for no longer than six response times.

v. After the low level calibration error check allow the CEMS to sample stack gas for at least 15 minutes.

vi. Repeat steps iii through v until all three low level calibration error checks are complete.

vii. Conduct post test calibration and zero checks.

2. <u>Spike Recovery and Bias Factor Determinations</u>
Spiking is defined as introducing known concentrations of the pollutant of interest (e.g., gas standard to contain a mixture of NO and NO2 is representative of the ratio of NO and NO2 in stack gas) and an appropriate non-reactive, non-condensable and non-soluble tracer gas from a single

cylinder (EPA Protocol as specified in Rule 218.1 or NIST traceable to 2 percent analytical accuracy if no EPA Protocol is available) near the probe and upstream of any sample conditioning systems, at a flow rate not to exceed 10 percent of the total sample gas flow rate. The purpose of the 10 percent limitation is to ensure that the gas matrix (water, CO2, particulates, interferences) is essentially the same as the stack gas alone. The tracer gas is monitored in real time and the ratio of the monitored concentration to the certified concentration in the cylinder is the dilution factor. The expected pollutant concentration (dilution factor times the certified pollutant concentration in the cylinder) is compared to the monitored pollutant concentration.

3. High Level Spike Recovery/Bias Factor Determination

The high level spike recovery/bias factor determination is used when it is technologically not possible to certify the CEMS per the standard Rule 218.1 requirements. The spiking facility/interface shall be a permanently installed part of the CEMS sample acquisition system and accessible to the Executive Officer as well as the CEMS operator.

a. Performance Specifications

The CEMS shall demonstrate a RA $\leq$ 20 percent, where the spike value is used in place of the reference method in the normal RA calculation, as described below.

b. Testing Procedures

i. Spike the sample to the CEMS with a calibration standard containing the pollutant of interest and CO or other non-soluble, non-reacting alternative tracer gas (alternative tracer gas) at a flow rate not to exceed 10 percent of the CEMS sampling flow rate and of such concentrations as to produce an expected 40-80 percent of the upper span value for the pollutant of interest and a quantifiable concentration of CO (or alternative tracer gas) that is at least a factor of 10 higher than expected in the unspiked stack gas. The calibration standards for both pollutants of interest and CO (or alternative tracer gas) shall meet Rule 218.1 requirements

ii. Monitor the CO (or alternative tracer gas) using an appropriate continuous (or semi-continuous if necessary) monitor meeting the requirements of Method 100.1 and all data falling within the 10-95 percent of the upper span value, and preferably within 30-70 percent of the upper span value.

iii. Alternate spiked sample gas and unspiked sample gas for a total of nine runs of spiked sample gas and ten runs of unspiked sample gas. Sampling times should be sufficiently long to mitigate response time and averaging effects.

iv. For each run, the average CEMS reading must be between 40 percent of the upper span value n and 80 percent of the upper span value. If not, adjust spiking as necessary and continue runs, but expected spike must represent at least 50 percent of the total pollutant value read by the CEMS.

v. Calculate the spike recovery for both the pollutant and the CO (or alternative tracer gas) for each run by first averaging the pre- and post-spike values for each run and subtracting that value from the spiked value to yield nine values for recovered spikes.

vi. Using the CO (or alternative tracer gas) spike recovery values for each run and the certified CO (or alternative tracer gas) concentration, calculate the dilution ratio for each run. Multiply the certified pollutant concentration by the dilution factor for each run to determine the expected diluted pollutant concentrations. Using the expected diluted concentrations as the "reference method" value, calculate the Relative Accuracy. The RA shall be $\leq$ 20 percent.

4. Low Level Spike Recovery/Bias Factor Determination

The low-level spike recovery/bias factor determination is used to determine if a significant bias exists at concentrations near the 10 percent of the upper span value. The spiking facility/interface shall be a permanently installed part of the CEMS sample acquisition system and accessible to the Executive Officer staff as well as the owner or operator of the CEMS.

a. Performance Specifications

There are no pass/fail criteria with respect to the magnitude of the percent relative accuracy. There are performance criteria for the range of concentration on the CEMS the extent to which the spike must be greater than the background pollutant level.

b. Testing Procedures

i. Spike the sample to the CEMS with a calibration standard containing the pollutant of interest and CO or other non-soluble, non-reacting alternative tracer gas (alternative tracer gas) at a flow rate not to exceed 10 percent of the CEMS sampling flow rate and of such concentrations as to produce an expected 10-25 percent of the upper span value for the pollutant of interest and a quantifiable concentration of CO (or alternative tracer gas) that is at least a factor of 10 higher than expected in the unspiked stack gas. The calibration

standards for both pollutants of interest and CO (or alternative tracer gas) shall meet Rule 218.3 requirements.

ii. Monitor the CO (or alternative tracer gas) using an appropriate continuous (or semi-continuous if necessary) monitor meeting the requirements of Method 100.1 and all data falling within the 10-95 percent of the upper span value, and preferably within 30-70 percent of the upper span value.

iii. Alternate spiked sample gas and unspiked sample gas for a total of nine runs of spiked sample gas and ten runs of unspiked sample gas. Sampling times should be sufficiently long to mitigate response time and averaging effects.

iv. For each run, the average CEMS reading must be below 25 percent of the upper span value and > 10 percent of the upper span value. If not, adjust spiking as necessary and continue runs; but expected spike shall represent at least 50 percent of the total pollutant value read by the CEMS.

v. Calculate the spike recovery for both the pollutant and the CO (or alternative tracer gas) for each run by first averaging the pre- and post-spike values for each run and subtracting that value from the spiked value to yield nine values for recovered spikes.

vi. Using the CO (or alternative tracer gas) spike recovery values for each run and the certified CO (or alternative tracer gas) concentration, calculate the dilution ratio for each run. Multiply the certified pollutant concentration by the dilution factor for each run to determine the expected diluted pollutant concentrations. Using the expected diluted concentrations as the "reference method" value, calculate the Relative Accuracy as specified in Rule 218.3. If the average difference is less than the confidence coefficient then no low level bias factor is applied. If the average difference is greater than the confidence coefficient and the average expected spike is less than the average CEMS measured spike, then no low level bias factor is applied. If the average difference is greater than the confidence coefficient and the average expected spike is greater than the average CEMS measured spike, then a low level bias factor equal to the absolute value of the average difference is added to data reported at or below the 10 percent of the upper span value.

5. Low Level RATA/Bias Factor Determination using Enhanced Reference Method 6.1

A low level RATA/bias factor determination is designed to determine if there exists a statistically significant bias at low level concentrations. It consists of nine test runs that measure the stack concentration and the CEMS concentration concurrently.

a. Performance Specifications

There are no pass/fail criteria with respect to the magnitude of the percent relative accuracy. There are performance criteria for the special RATA with respect to the reference method and range of concentration on the CEMS.

b. Testing Procedures

The reference method for the low level RATA/bias factor determination is Method 100.1

i. Perform a minimum of nine runs of low level RATA for CEMS versus the reference method at actual levels (unspiked).

ii. The span range for the reference method shall be such that all data falls with 20 - 95 percent of the upper span value.

iii. The reference method shall meet all Method 100.1 performance criteria.

iv. Calculate the average difference (d = CEMS - reference method, ppm) and confidence coefficient (cc = statistical calculated, ppm).

v. If $d > 0$ then the bias = 0 ppm; if $d < 0$ and $|d| > cc$ then bias = d; if $d < 0$ and $|d| < cc$ then bias = 0 ppm.

C. Testing Frequency

The owner or operator of the CEMS shall perform the aforementioned performance requirements once a year thereafter. These annual assessments shall be completed within six months of the end of the calendar quarter in which the CEMS was originally certified.

ATTACHMENT B

Concentration stratification and CEMS probe location

A. Test for Concentration Stratification

The owner or operator of the CEMS shall demonstrate the absence of stratification through testing performed according to the method in Chapter X, Section 13 - "Non-Standard Methods and Techniques", of the District Source Testing Manual. The tests shall be conducted at:

1. One load level if the owner or operator demonstrates to the satisfaction of the Executive Officer that the equipment operates within a 20 percent load range for at least 80 percent of the time;
2. Two different load levels if the owner or operator demonstrates to the satisfaction of the Executive Officer that the equipment operates within a 50 percent load range for at least 80 percent of the time; or
3. Three different load levels if the equipment operates outside of the criteria in subclauses (f)(4)(E)(i)(I) and (f)(4)(E)(i) (II).

B. Absence of Stratification

The absence of stratification is considered verified if the difference between the highest measured concentration (time normalized) and the lowest measured concentration (time normalized) divided by the average measured concentration (time normalized), when expressed as a percentage, is less than or equal to 10 percent. Upon verification of the absence of stratification:

1. The owner or operator of the CEMS may position the CEMS sampling probe at any point within the stack with the exception of those points that are adjacent to the stack wall;

2. The CEMS sampling probe shall be located in the stack at least one-third of the stack diameter; and

3. The reference method for RATA may be conducted at a single point within the stack that is not adjacent to the stack wall and does not interfere with the sampling and the operation of the facility CEMS.

C. Presence of Stratification

If the testing demonstrates the presence of stratification, the owner or operator of the CEMS shall elect one of the following alternatives:

1. If the stratification is greater than 10 percent but the difference between the highest measured concentration (time normalized) and the lowest measured concentration (time normalized) is less than or equal to 1.0 ppmv:
   a. Then the CEMS sampling probe may be located at any point within the stack except any points that is adjacent to the stack or adjacent to the highest measured concentration (time normalized) and the lowest measured concentration (time normalized); or
   b. If it is not possible to avoid using a point adjacent to either the highest measured concentration (time normalized) or the lowest measured concentration (time normalized), then the CEMS sampling probe shall be located such that the placement minimizes the difference between the concentration at the proposed probe location and the concentration at the point of highest measured concentration (time normalized) or the lowest measured concentration (time normalized).

2. Determine a representative CEMS probe location such that the following criteria are met:
   a. All traverse point concentrations are within 10 percent of the average of all traverse point concentrations (time normalized), or, the difference is less than or equal to 1.0 ppm, whichever is greater;
   b. There exists at least one traverse point concentration (Xr), not located next to the stack or duct wall, that is less than or equal to 10 percent of each adjacent traverse point concentration of Xr, or the difference is less than or equal to 1.0 ppm, whichever is greater; and
   c. The CEMS probe is located at (or as near as practical to) Xr with minimum adjacent traverse point concentration fluctuations as determined above in section (C)(2)(b).

3. Determine a representative multiple point sampling configuration as approved by the Executive Officer, following the guidance document prepared by Emission Measurement Technical Information Center, "Evaluation Procedure for Multi-Hole Sample Probes" (EMTIC GD-031) and the South Coast AQMD guidance document, “Multi-Point Probe Acceptance and Quality Assurance Standards”.

4. Modify the stack and/or CEMS sampling probe location and retest for the absence of stratification.

ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report
Proposed Amended Rule 218 – Continuous Emission Monitoring
Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions
Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications

March 2021

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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EXECUTIVE OFFICER:

WAYNE NASTRI

TABLE OF CONTENTS

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

A continuous emission monitoring system (CEMS) is the combination of equipment necessary for the determination of pollutant concentrations or emission rate on a continuous basis using analyzer measurements and a conversion equation, graph, or computer program to produce results in units of the applicable emission limitation or standard.

The South Coast Air Quality Management District (South Coast AQMD) has various rules, regulations and permit conditions that require the installation and operation of CEMS as a means to determine compliance with an emission limitation or standard. The South Coast AQMD has established CEMS monitoring rules to provide the guidance and specifications for the CEMS installation and operation and to ensure accuracy and precision of the CEMS. For facilities that under a command-and-control regulatory structure and are not in the Regional Clean Air Incentives Market (RECLAIM), CEMS provisions are specified in Rule 218 – Continuous Emissions Monitoring and Rule 218.1 – Continuous Emissions Monitoring Performance Specifications. For RECLAIM facilities, CEMS provisions are specified in Rule 2011 – Requirements for Monitoring, Reporting, and Recordkeeping for SOx Emissions and Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for NOx Emissions.

The United States Environmental Protection Agency specifies requirements on stationary source continuous emission monitoring under several programs, including 40 CFR Part 60 - New Source Performance Standards (NSPS) and 40 CFR Part 75 – Continuous Emission Monitoring that is in support of the EPA's Acid Rain Program.

There are equipment in the South Coast AQMD subject to both federal requirements and local rules for the CEMS. While the equipment installation and setup are generally compatible, the difference between various regulations are mainly on testing, performance standards, and data handling.

Rule 2012- Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions, and specifically Rule 2012 Chapter 2 – Continuous Emission Monitoring System (CEMS), provide requirements on NOx CEMS subject to the NOx RECLAIM program (NOx RECLAIM CEMS) for mass emission monitoring. When the RECLAIM program transitions to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT), the CEMS of RECLAIM facilities would become former RECLAIM CEMS. Unless otherwise specified by source specific rules, the design of a former RECLAIM CEMS would change from mass emission monitoring to concentration limit compliance demonstration.

Rules 218 and 218.1 are the existing monitoring rules for CEMS with a focus on concentration limit compliance demonstration. Rule 218 – Continuous Emission Monitoring, and Rule 218.1- Continuous Emission Monitoring Performance Specifications, are applicable to owners or operators of all CEMS that are required by the South Coast AQMD rules, regulations or permit conditions, except for CEMS under the RECLAIM program, or CEMS for equipment performance evaluation instead of compliance determination. CEMS subject to Rules 218 and 218.1 are also referenced as non-RECLAIM CEMS.

For the RECLAIM program transition, staff is proposing to develop two new monitoring rules and amend Rule 218. Proposed Rule 218.2 (PR 218.2) - Continuous Emission Monitoring System: General Provision, and Proposed Rule 218.3 (PR 218.3) - Continuous Emission Monitoring

System: Performance Specification, would provide specifications for both former RECLAIM CEMS that are previously certified according to the RECLAIM program, as well as non-RECLAIM CEMS that are previously certified according to Rules 218 and 218.1. An implementation schedule is specified under Proposed Rules 218.2 and 218.3 (PR 218.2 and 218.3) to define the compliance date of each system. Prior to the compliance date, former RECLAIM CEMS would continue to be subject to their current monitoring provisions under RECLAIM (i.e., Rule 2012 for NOx CEMS), and non-RECLAIM CEMS would continue to be subject to Rules 218 and 218.1.

PR 218.2 is based on Rule 218 with a focus on CEMS administrative requirements and staff proposes to: (1) revise the provisions retained from Rule 218 with key modifications on certification process for CEMS modification and the requirements for reporting; and (2) incorporate a new provision (subdivision (e)) that would require CEMS to be in a continuous operation, except during the defined CEMS maintenance and repair, and allow CEMS to be shut down when the unit (emission source) becomes offline for at least one week.

PR 218.3 is based on Rule 218.1 with a focus on CEMS performance specification and staff proposes to: (1) revise the provisions retained from Rule 218.1 with key modifications on span range, data acquisition and handling system, relative accuracy test audit, and calibration gas requirements; and (2) incorporate a new provision (subdivision (i)) that would provide specifications on data handling method for data measured below 10 percent or above 95 percent of the upper span value, emission data averaging method, CEMS data availability requirements, and CEMS out-of-control period and alternative data acquisition.

For the provisions provided under Rules 218 and 218.1 that staff proposes under PR 218.2 and 218.3 without revision for the requirements, there may be terminology, sentence or structure changes. The terminology and sentence changes are for consistency and conciseness. The structures changes could be rearranging one paragraph into more levels of expression (such as by paragraph, subparagraph, clause, etc.) for better comprehension. There are also practices for certification and testing that have been consistently applied and are now included in PR 218.2 and 218.3.

With regards to the compliance date, PR 218.2 and 218.3 would be applicable to non-RECLAIM CEMS at the time of the CEMS certification/recertification. This would be applied during the period of one to four years after the rule adoption, or at the end of four years after the rule adoption if there is no certification/recertification application in that period. The owner or operator of the CEMS may also opt to implement PR 218.2 and 218.3 according to the implementation date of a landing rule, for which the CEMS would be recertified as part of the landing rule implementation. Landing rules amended or adopted are presumably preparing for the RECLAIM facilities transitioning to a command and control regulatory structure.

PR 218.2 and 218.3 would be applicable to former RECLAIM CEMS at the time of the CEMS certification/recertification after the facility exits NOx RECLAIM but no later than two years after exiting NOx RECLAIM, or at the end of two years after exiting NOx RECLAIM if there is no CEMS certification/recertification application during that period. Similar to non-RECLAIM CEMS, the owner or operator of the former RECLAIM CEMS may also opt to implement PR 218.2 and 218.3 by the implementation date of a landing rule that is amended or adopted, for which the CEMS would be recertified as part of the landing rule implementation.

Staff also proposes to amend Rule 218 to incorporate a phase out provision that requires the owner or operator of any CEMS subject to Rules 218 and 218.1 to transition to comply with PR 218.2 and 218.3 according to the implementation schedule specified in PR 218.2 (d) or PR 218.3 (d).

PR 218.2 and 218.3, and proposed amended rule 218 (PAR 218) provide administrative and technical guidelines for installing and operating the CEMS required by the South Coast AQMD rules or permit conditions. As these rules do not directly regulate sources for emissions control, there is no emission reductions entailed by this rule development.

CHAPTER 1: BACKGROUND

INTRODUCTION

A continuous emission monitoring system (CEMS) is the combination of equipment necessary for the determination of pollutant concentrations or emission rate on a continuous basis using analyzer measurements and a conversion equation, graph, or computer program to produce results in units of the applicable emission limitation or standard. The South Coast Air Quality Management District (South Coast AQMD) has various rules, regulations and permit conditions that require the installation and operation of CEMS to determine compliance with an emission limitation or standard. The South Coast AQMD has established CEMS monitoring rules to provide the guidance and specifications for the CEMS installation and operation and to ensure accuracy and precision of the CEMS. For facilities that under a command-and-control regulatory structure and are not in the Regional Clean Air Incentives Market (RECLAIM), CEMS provisions are specified in Rule 218 – Continuous Emissions Monitoring and Rule 218.1 – Continuous Emissions Monitoring Performance Specifications. For RECLAIM facilities, CEMS provisions are specified in Rule 2011 – Requirements for Monitoring, Reporting, and Recordkeeping for SOx Emissions and Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for NOx Emissions.

The United States Environmental Protection Agency (U.S. EPA) specifies requirements on stationary source continuous emission monitoring under several programs, including 40 CFR Part 60 - New Source Performance Standards (NSPS) and 40 CFR Part 75 – Continuous Emission Monitoring that is in support of the EPA's Acid Rain Program.

NEED FOR RULE AMENDMENTS

Staff is developing Proposed Rule 218.2 (PR 218.2) - Continuous Emission Monitoring System: General Provision, and Proposed Rule 218.3 (PR 218.3) - Continuous Emission Monitoring System: Performance Specification to update CEMS requirements and to prepare for the transition of facilities in RECLAIM to a command-and-control regulatory program. Since requirements for installation and operation of CEMS for RECLAIM facilities resides in Rules 2011 and 2012, as these facilities transition to command-and-control CEMS requirements for all facilities will reside under Proposed Rules 218.2 and 218.3 to ensure consistency for all facilities required to meet emission limits for command-and-control rules. Many of the revisions to the CEMS requirements are not new, however, will provide more clarity and codify practices that are currently being implemented to improve the transparency and streamline implementation.

Staff has initiated rulemaking to establish Best Available Control Technology (BARCT) for facilities in the RECLAIM program consistent with Control Measure CMB-05: Further NOx Reductions from RECLAIM Assessment (NOx) in the 2016 Air Quality Management Plan (2016 AQMP). CMB-05 includes a series of options to achieve additional NOx reductions from RECLAIM facilities including transitioning facilities to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT). In addition, California State Assembly Bill 617 (AB 617), which was signed by the Governor on July 26, 2017 and affects RECLAIM facilities that are also in the California Greenhouse Gas Cap and Trade program, requires implementation of Best Available Retrofit Control Technology (BARCT) no later than December 31, 2023, with priority given to older, higher polluting units.

As facilities begin to transition out of RECLAIM the focus on monitoring will be on the NOx concentration limit instead of the mass emission limit. In addition, RECLAIM facilities will transition from compliance with Rule 2012 to Proposed Rules 218.2 and 218.3. Rule 2011-Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions, provides requirements for CEMS for SOx RECLAIM facilities. While the current

transition is focused on NOx RECLAIM, staff will be working on a transition of SOx RECLAIM facilities. Similar to NOx RECLAIM facilities, SOx RECLAIM facilities with CEMS would be subject to 218.2 and 218.3 upon transitioning to a command-and-control regulatory program.

REGULATORY HISTORY

The following provides the regulatory history of the current CEMS rules under the South Coast AQMD's regulatory programs and federal programs. Within the South Coast AQMD's regulatory program there are two regulatory programs for the installation and operation of CEMS: RECLAIM CEMS requirements which are specified under Rules 2011 and 2012; and non-RECLAIM which are specified under Rules 218 and 218.1. CEMS requirements under the RECLAIM program focuses on mass emission compliance since the RECLAIM program is a market incentives program that focuses on mass emissions. CEMS monitoring for non-RECLAIM sources under a command-and-control regulatory structure focus on compliance with concentration limits. This section also discusses the rules that specify what sources are required to install CEMS. Lastly, a general overview of federal CEMS requirements is discussed as there are some facilities that are concurrently subject to CEMS monitoring requirements under the federal program, such as the Acid Rain Program.

Rules 2011 and 2012

The adoption of the RECLAIM program in October 1993, included Rules 2011 and 2012 that established the monitoring, reporting, and recordkeeping requirements for SOx and NOx emissions under the RECLAIM program. For the largest sources, Rules 2011 and 2012 required CEMS, which at the time were state of the art monitoring systems that were critical for the RECLAIM program where compliance was based on mass emissions as compared to NOx concentration limits under command-and-control. The most recent amendments to Rule 2012 were made in January 2005 and May 2005 that included allowing a delay in the due date for the Relative Accuracy test Audit (RATA) for a unit that is operated intermittently and specifying mass emissions reporting through the South Coast AQMD's website. Rule 2012 was last approved by the US EPA on September 14, 2017 into the California State Implementation Plan (SIP).

Rules 218 and 218.1

Rule 218 - Stack Monitoring was adopted on January 9, 1976 for requirements on continuous stack emission monitoring, with provisions on both administrative and technical guidelines. Rule 218 was amended several times, with the most significant amendment on May 14, 1999 to recognize the advancements in CEMS and to separate certain requirements from Rule 218 to a new Rule 218.1. Rule 218 focused on administrative requirements and the new Rule 218.1 focused on performance specifications.

Rule 218.1 was further amended in 2012 to align the calibration requirements for CEMS for non-operating days with the provisions in Regulation XX, specifically Rule 2011 for SOx CEMS and Rule 2012 for NOx CEMS, under the RECLAIM program. Rules 218 and 218.1 were last approved by the U.S. EPA on June 8, 2010 into the California SIP.

Source-Specific Rules that Require CEMS

The South Coast AQMD source-specific rules establish emission standards for various source categories and specify monitoring, recordkeeping, and reporting requirements. The source-specific rules set CEMS applicability, the criteria for the requirement of continuous emission monitoring. Some source specific rules may impose additional requirements for CEMS (e.g., CEMS data averaging time under Rule 1134 and CEMS operating and compliance schedule under Rule

1110.2). CEMS monitoring rules, such as Rules 218 and 218.1, provide extensive specifications for CEMS installation, operation, certification, quality assurance, recordkeeping, and reporting.

When RECLAIM facilities transition to the command and control structure for NOx sources, the applicability of CEMS for the sources, previously determined by Rule 2012, would be subject to the applicability requirements specified in the source-specific rules. Table 1-1 provides the comparison between Rule 2012 and source-specific rules for CEMS applicability. The main differences are between industrial boilers and internal combustion engines. For industrial boilers, CEMS monitoring may no longer be required for certain RECLAIM units (potentially eight units identified during the rulemaking Rule 1146 in 2018). For internal combustion engines, CEMS monitoring would be required for some units that had no CEMS monitoring requirements under RECLAIM.

Table 1-1:
Comparison Between CEMS Applicability by Rule 2012 and Source-Specific Rules

	Rule 2012 CEMS Applicability	**Source-Specific Rule CEMS Applicability**	**Changes to RECLAIM Facilities**
Rule 1146 (Amended December 7, 2018) Industrial Boilers and Heaters (Not including Refinery Boilers and Heaters)	• Heat input > = 40 MMBtu/hr but < 500 MMBtu/hour and annual heat input > 90 x 10^9 Btu/year; or • Heat input > = 500 MMBtu/hour	• Heat input > = 40 MMBtu/hour and annual heat input > 200 x 10^9 Btu/year	Some CEMS may no longer be required if the source's annual heat input is no more than 200 x 10^9 Btu/year
Rule 1110.2 (Amended November 1, 2019) Internal Combustion Engine (Non-Electric Generating Facilities)	>= 1,000 bhp and operating > 2,190 hours/year	• >= 1,000 bph; or • Multiple units (each >= 500 bhp) with combined rating >= 1,500 bhp and combined fuel usage >= 16 x 10^9 Btu/year •	Some units with an on-site aggregate horsepower rating ≥ 1500 hp would require CEMS under Rule 1110.2
Rule 1135 (Amended November 2, 2018) Internal Combustion Engine at Electric Generating Facilities	>= 1,000 bhp and operating > 2,190 hours/year	Applicability remains the same for NOx source for ICE in EGF former RECLAIM facilities	No change
Rule 1134 (Amended April 5, 2019)	>= 2.9 megawatts excluding emergency standby equipment or peaking unit	Applicability remains the same for former RECLAIM NOx source	No change

	Rule 2012 CEMS Applicability	Source-Specific Rule CEMS Applicability	Changes to RECLAIM Facilities
Gas Turbines (Non-Electric Generating Facilities)			
Rule 1135 (Amended November 2, 2018) Gas Turbines at Electric Generating Facilities	>= 2.9 megawatts excluding emergency standby equipment or peaking unit	Applicability remains the same for former RECLAIM NOx source	No change
Rule 1117 (Amended June 5, 2020) Furnaces at Container Glass and Silicate Facilities	• Heat input > = 40 MMBtu/hr but < 500 MMBtu/hr and annual heat input > 90 x 109 Btu/yr; or • Heat input > = 500 MMBtu/hr	Applicability remains the same for former RECLAIM NOx source	No change
Proposed Amended Rule 1109.1 Refinery FCCU, refinery tail gas unit, and Calciner at Petroleum Refineries and Related Industries	Any	Proposed applicability remains the same for former RECLAIM NOx source	No change
Proposed Amended Rule 1147 Furnace, oven, dryer, heater, incinerator, test cell and any solid, liquid or gaseous fueled equipment	• Heat input > = 40 MMBtu/hr but < 500 MMBtu/hr and annual heat input > 90 x 109 Btu/yr; or • Heat input > = 500 MMBtu/hr	Applicability will be reassessed	To be determined
Proposed Amended Rule 1147 Kiln	Process >=10 tons/hour and >21,9000 tons/year, except brick kilns	Applicability will be reassessed	To be determined

Federal Requirements for CEMS

Federal requirements for stationary source emission monitoring are specified under several programs, including 40 CFR Part 60 - New Source Performance Standards (NSPS) and 40 CFR Part 75 – Continuous Emission Monitoring. Part 60 establishes air pollution control standards for various individual industrial or source categories. Part 60 Appendix B contains performance specifications on installation and certification procedures for CEMS SO2, NOx, CO2, O2, CO, VOC, etc., and Appendix F details on CEMS quality assurance procedures. Part 75 establishes requirements for monitoring, recordkeeping, and reporting of SO2, NOx, and CO2 emissions, volumetric flow, and opacity data from affected units under the Acid Rain Program. Part 75 Appendix A defines CEMS installation, equipment, and performance specification for certification, and Appendix B provides quality assurance and quality control procedures.

There are equipment in the South Coast AQMD subject to both federal requirements and local rules for the CEMS. While the equipment installation and setup are generally compatible, the differences between local and federal regulations are generally limited to on testing, performance standards, and data handling.

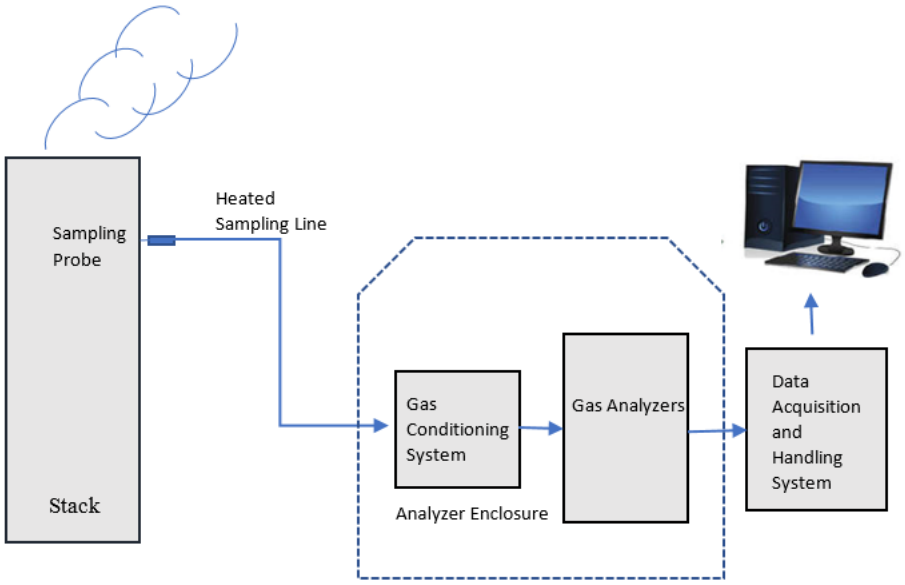
REGULATORY APPROACH FOR RULEMAKING FOR RULE 218 SERIES

To address the revisions and incorporate the revised provisions into Rules 218 and 218.1, staff initially proposed to amend Rules 218 and 218.1. During the rulemaking process, staff recognized that there is a need to retain the existing requirements for the transitional period before the proposed new requirements become effective and was concerned that the existing and revisions and changes to the rule structure would be very confusing to the regulated community if the provisions were embodied in Rules 218 and 218.1. Therefore, the current approach is to: (1) maintain Rules 218 and 218.1 for the existing provisions; and (2) establish PR 218.2 and 218.3 as the revised CEMS provisions for revised and new requirements. The existing provisions for Proposed Rule 218.2 are in Rule 218, and the existing provisions for Proposed Rule 218.3 are in Rule 218.1.

OVERVIEW OF CEMS

The standard CEMS consists of a sample probe, filter, sample line (umbilical), gas conditioning system, calibration gas system, and a series of gas analyzers which reflect the parameters being monitored (See Figure 1-1). Monitored pollutants generally include nitrogen oxides, sulfur dioxide, carbon monoxide, carbon dioxide, and oxygen. CEMS can also measure air flow, flue gas opacity and moisture. The South Coast AQMD also requires a data acquisition and handling system to collect, record, and report the measured data.

Figure 1-1
Typical CEMS Setup



Different Types of CEMS

PR 218.2 and 218.3 would apply to non-RECLAIM facilities and RECLAIM and former RECLAIM facilities where a CEMS that also includes Alternative Continuous Emission Monitoring System (ACEMS) and Semi-Continuous Emission Monitoring System (SCEMS) is required. A CEMS directly monitors emissions in the stack. An ACEMS, uses process or control device operating parameter measurements and a conversion equation, a graph, or computer program to produce results in units of the applicable emission limitation or standard on a continuous monitoring basis. A SCEMS is only different from a regular CEMS on response time and data acquisition frequency. SCEMS continuously takes and records measurements (e.g. concentration, mass emission, flow rate) at a minimum of once in every fifteen (15) minutes, versus once every minute for a regular CEMS. A time shared CEMS is also considered as a SCEMS. In this report staff will be using the term CEMS in representing all regulated monitoring systems including CEMS, ACEMS and SCEMS, unless otherwise specified.

AFFECTED FACILITIES

Based on the RECLAIM compliance year 2017 audit data, there are 83 RECLAIM facilities that in total operate 500 units with NOx emissions monitored by CEMS. It should be noted that one CEMS may monitor emissions for several units, which is common in a petroleum refining facilities.

Based on the South Coast AQMD's data base for non-RECLAIM CEMS applications, there are 126 non-RECLAIM facilities that previously installed one or more CEMS, estimating 250 units monitored by CEMS. Since records do not indicate the current status of the CEMS, some of non-RECLAIM CEMS may no longer be active. The CEMS universe may change when some landing rules are adopted or amended and become applicable to RECLAIM facilities.

PUBLIC PROCESS

The development of Proposed Amended Rule 218 and Proposed Rules 218.2 and 218.3 was conducted through a public process. Eleven Working Group Meetings were held on: March 13, 2019, May 2, 2019, June 11, 2019, September 12, 2019, November 12, 2019, February 13, 2020, June 26, 2020, July 16, 2020, October 6, 2020, and November 5, 2020. Working Groups included a wide variety of stakeholders such as affected facilities, consultants, environmental and community groups, and other agencies. The objective of the Working Group Meetings is to build consensus and resolve key issues with the stakeholders.

A Public Workshop was held on January 6, 2021. The purpose of the Public Workshop was to present the proposed rule language to the general public and to stakeholders and to solicit comments. Staff also has had numerous individual meetings with stakeholders and conducted multiple site visits as part of this rulemaking process. In addition, staff has had discussions with staff from the U.S. EPA and the California Air Resource Board (CARB) for issues related to the PR 218.2 and 218.3.

CHAPTER 2: PROPOSED RULE 218.2

PROPOSED RULE REQUIREMENTS

INTRODUCTION

Similar to Rule 218, PR 218.2 focuses on administrative CEMS requirements. PR 218.2 proposes to incorporate: (1) revisions to the provisions retained from Rule 218; and (2) new monitoring requirements in subdivision (e). PR 218.2 subdivision (e) require a CEMS to be in continuous operation, except during the defined CEMS maintenance and repair, or during a scheduled CEMS shut down when the unit (emission source) becomes offline for at least one week.

PR 218.2 (a) – PURPOSE

The purpose of this rule is to specify requirements for CEMS, Alternative Continuous Emission Monitoring System (ACEMS), and Semi-Continuous Emission Monitoring System (SCEMS). This rule refers to Rule 218.3 for requirements for certifications and quality assurance of CEMS, ACEMS, and SCEMS. While Rule 218 does not have a similar provision, this subdivision expresses the same intended purpose of Rule 218.

PR 218.2 (b) - APPLICABILITY

PR 218.2 subdivision (b) is based on the same applicability as Rule 218 subdivision (b). PR 218.2 provides further clarification. PR 218.2 applies to owners and operators of continuous monitoring systems in demonstrating compliance with emission limits or standards required by the South Coast AQMD rules, regulations or permit conditions, excluding any CEMS for performance evaluation that is not required by the South Coast AQMD, or any CEMS in the RECLAIM program.

An example of a CEMS for performance evaluation that is not required by the South Coast AQMD would be a CEMS that is monitoring upstream emissions of a Selective Catalytic Reduction (SCR) control equipment. The upstream emissions monitored by this CEMS, in conjunction with the emissions at the exhaust stack monitored by a certified CEMS, are utilized to calculate the control efficiency of the SCR. Instead of demonstrating compliance with an emission standard, this CEMS determines the performance of the SCR, and thus is not subject to PR 218.2.

A CEMS in the RECLAIM program that is monitoring NOx or SOx emissions is not subject to PR 218.2 since it is subject to Rule 2012 for NOx CEMS and Rule 2011 for SOx CEMS. However, when a RECLAIM facility transitions out of the RECLAIM program, the CEMS would be subject to PR 218.2 according to an implementation schedule specified under PR 218.2 subdivision (d). At this time only NOx RECLAIM program is transitioning to a command and control regulatory structure.

PR 218.2 (c) - DEFINITIONS

Table 2-1 lists the definitions that have been removed or added in PR 218.2, as compared to the definitions in Rule 218. Definitions were removed because they either were no longer used in the rule or are now integrated into the provision. Definitions were added because it is a new terminology used in the rule or to provide additional clarification. There are also several definitions (e.g., DILUENT GAS) that are being revised. The revisions are to provide clarity for the same meaning.

Table 2-1: PR 218.2 Definitions Removed and Added as compared to Rule 218 Definitions

	Definitions
Definitions Removed	• CALIBRATION CHECK • CERTIFIED GAS MIXTURE • MODIFICATION REQUIRING RECERTIFICATION

	Definitions
	• WORKING DAY • ZERO CHECK • ZERO GAS
Definitions Added	• ACEMS • CALIBRATION ERROR TEST • CEMS FAILURE • CEMS FINAL CERTIFICATION LETTER • CEMS MODIFICATION • PUBLICLY OWNED SEWAGE-WATER-LANDFILL FACILITY • RECLAIM • RECLAIM FACILITY • FORMER RECLAIM FACILITY • UNIT

PR 218.2 (d) - IMPLEMENTATION SCHEDULE
The CEMS certified for operation are categorized into two groups:

- RECLAIM CEMS,
- Non-RECLAIM CEMS.

RECLAIM CEMS are currently subject to Regulation XX, specifically Rule 2012 for NOx RECLAIM CEMS, while non-RECLAIM CEMS are subject to Rules 218 and 218.1 for CEMS specifications. Non-RECLAIM CEMS, and any RECLAIM CEMS after exiting RECLAIM, will transition to PR 218.2 and 218.3 according to the implementation schedule specified in this subdivision.

There are several considerations in establishing the CEMS implementation schedule. For RECLAIM facilities, NOx RECLAIM facilities would first need to exit RECLAIM before transitioning their CEMS to PR 218.2 and 218.3. However, prior to the transition it is important that RECLAIM facilities continue complying with Rule 2012 as the CEMS requirements ensure compliance with mass emission as compared to emission concentration requirements. Second, CEMS certification/recertification is a critical point in commencing the implementation of the CEMS to the requirements specified in PR 218.2 and 218.3. For a CEMS without a foreseeable recertification date (e.g., units already meeting the new NOx limits), a final implementation date would be established in the PR 218.2 and 218.3. The landing rule implementation date could be an option for the CEMS implementation. For most units, the implementation timeline would be staggered based on equipment modifications to meet NOx limits specified in the landing rules. Based on the above considerations, the implementation schedules are proposed as specified in subdivision (d). These implementation schedules are presented in Figures 2-1, 2-2, 2-3, 2-4, and 2-5.

PR 218.2 and 218.3 are applicable to non-RECLAIM CEMS at the time of the CEMS certification/recertification. This would be applied during the period of one to four years after the rule adoption, or at the end of four years after the rule adoption if there is no certification/recertification application in that period. The owner or operator of the CEMS may

also opt to implement PR 218.2 and 218.3 according to the implementation date of a landing rule, for which the CEMS would be recertified as part of the landing rule implementation. Landing rules amended or adopted are presumably preparing for transitioning the NOx RECLAIM facilities to a command and control regulatory structure.

PR 218.2 and 218.3 would also be applicable to RECLAIM CEMS at the time of the CEMS certification/recertification after the facility exits NOx RECLAIM but no later than two years after exiting NOx RECLAIM, or at the end of two years after exiting NOx RECLAIM if there is no CEMS certification/recertification application during that period. Similar to non-RECLAIM CEMS, the owner or operator of the RECLAIM CEMS may also opt to implement PR 218.2 and 218.3 by the implementation date specified in the landing rule that has been amended or adopted, for which the CEMS would be recertified as part of the landing rule implementation.

If the CEMS shares the sampling interface or more component(s) with another CEMS, each CEMS would be subject to a different implementation schedule. For example, a NOx and CO CEMS may both monitor emissions from a turbine in a RECLAIM facility. The NOx emissions monitoring portion is subject to Rule 2012 and considered a RECLAIM CEMS. However, the CO emission monitoring portion is subject to Rules 218/218.1 and considered a non-RECLAIM CEMS. In this example these two CEMS share the same sampling interface and some part (e.g., the hardware) of the data acquisition system, yet operate with different analyzers and data processing modules. To streamline the implementation, the owner or operator of these two CEMS will be given the option to select the later implementation date for both CEMS.

For a publicly owned sewage-water-landfill facility, considering its uniqueness in administration and operation, PR 218 and 218.3 propose to allow all existing unit to implement the new requirements at the same time.

Figure 2-1:
Applicability Prior to the Implementation of PR 218.2 and PR 218.3

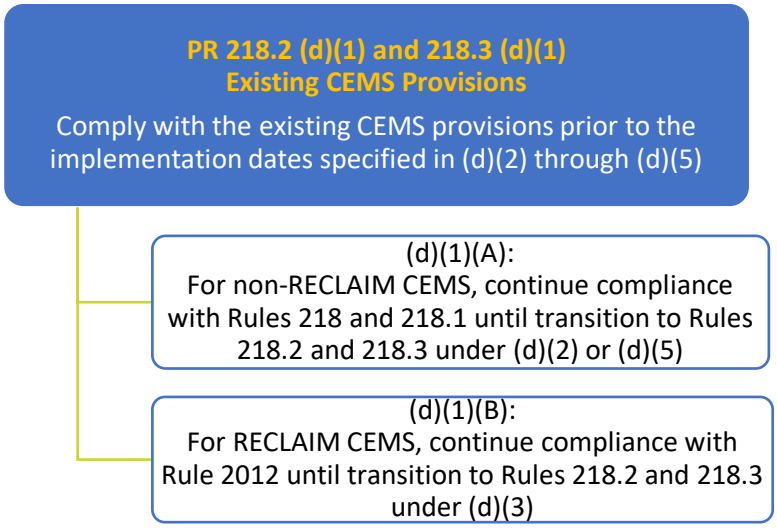


Figure 2-2:
Transition Dates for Non-RECLAIM CEMS

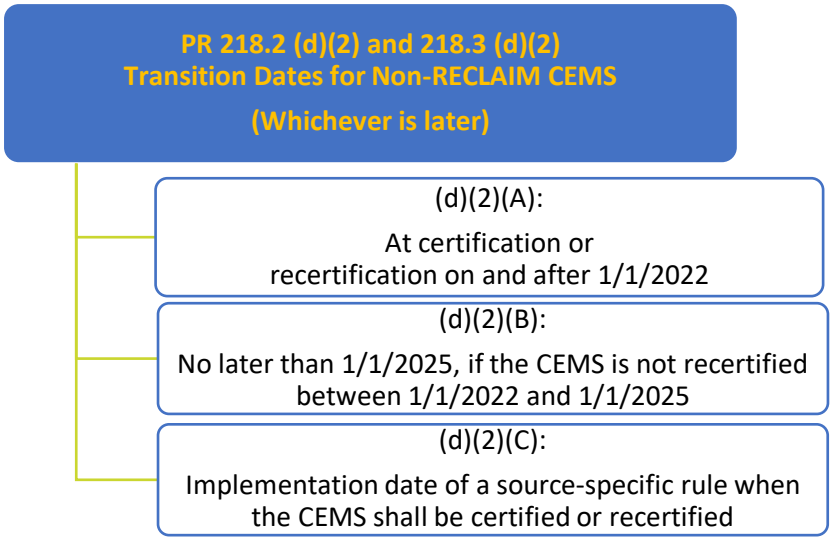


Figure 2-3:
Transition Dates for RECLAIM CEMS

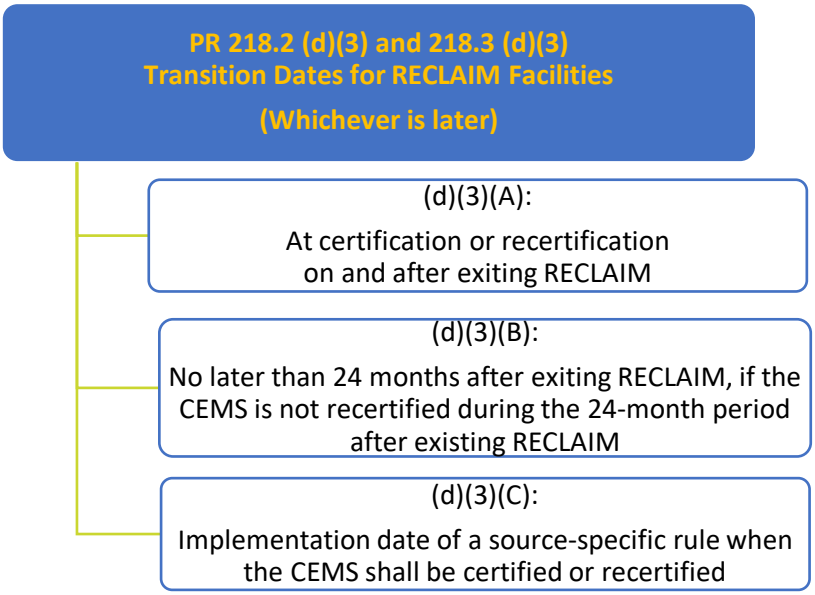


Figure 2-4:
Transition Dates When a Non-RECLAIM CEMS and a RECLAIM CEMS Share a Sampling Interface or Other Component (s)

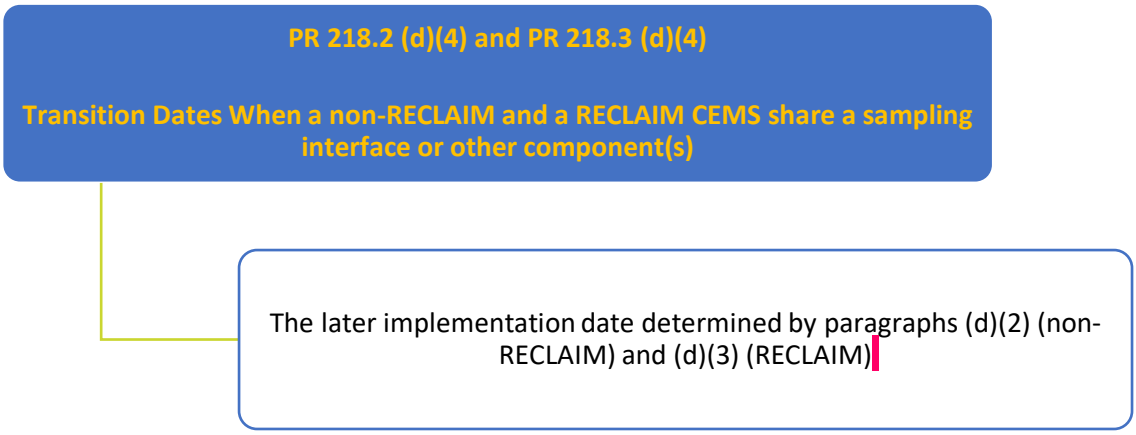
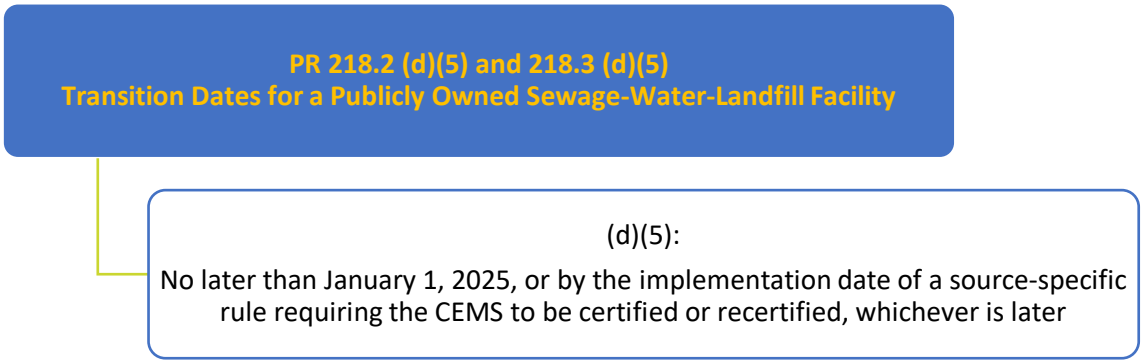


Figure 2-5:
Transition Dates for a Publicly Owned Sewage-Water-Landfill Facility



PR 218.2 (e) - MONITORING REQUIREMENTS

Currently, Rules 2011 and 2012 require continuous operation, except during a scheduled or unscheduled CEMS maintenance or repair for up to 96 hours for each occurrence. Rules 2011 and 2012 allow an extension for an additional 96 hours if the emitting source is not operating.

Currently, Rules 218 and 218.1 also require the maintenance of continuous operation, except during CEMS maintenance or repair for up to 96 hours, however, if additional hours are needed, the owner or operator of the non-RECLAIM CEMS will need to make a request to the South Coast AQMD Hearing Board through an interim variance. Stakeholders suggested at the Working Group

Meetings that the variance process is burdensome to the regulated industry. In addition, stakeholders requested to allow CEMS non-operation when the emitting source is not operating.

PR 218.2 (e)(2) will align the RECLAIM requirement during the CEMS maintenance or repair for all facilities. PR 218.2 will allow CEMS non-operation for up to 96 hours, with an additional 96 hours if the emitting source (unit) is not operating or generating emissions, for each occurrence. For the purpose of demonstrating that the unit is not operating or generating emissions, the owner or operator of the CEMS would be required to refer to one of the options specified under PR 218.2 (e)(4).

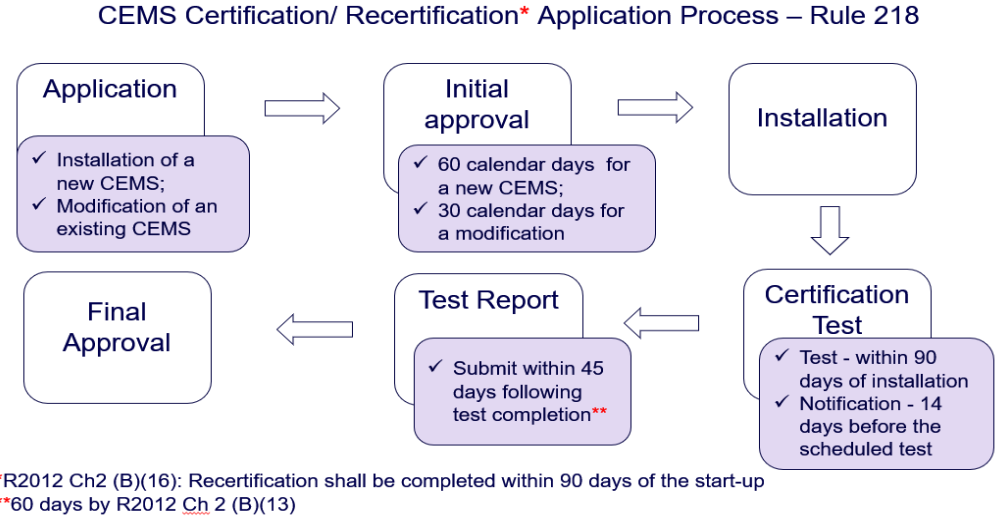
In addition, PR 218.2 (e)(3) will allow the owner or operator to shut down the CEMS when the unit is scheduled to be off for a minimum 168 consecutive hours, provided specific conditions are met. PR 218.2(e)(3) provides monitoring relief during a long-term unit shutdown that is demonstrated by one of the options specified under paragraph (e)(4). For any unit with a shutdown period shorter than 168 consecutive hours, the owner or operator of the CEMS would not be permitted to use this provision for monitoring relief.

PR 218.2 (f) - CERTIFICATION REQUIREMENTS

Certification or Recertification Application Process for a CEMS new installation or modification

PR 218.2 will retain the application process for a full CEMS certification or recertification as specified in Rule 218, including the same application form ST-220, (See Figure 2-5). The initial approval ensures that the application package is complete.

Figure 2-5: CEMS Certification and Recertification Application Process



Similar to Rule 218, Proposed Rule 218.2 will only allow testing laboratories or firms that are approved under the South Coast AQMD Laboratory Approval Program (LAP) to perform CEMS certification and other performance tests. The LAP is a program administered by the South Coast AQMD and grants test method-specific approvals to private testing laboratories or firms to perform tests in determining source compliance with the South Coast AQMD rules and regulations.

Recertification Application Process for a CEMS Modification required within 30 days due to CEMS failure

A concern was raised on the timeline needed to recertify a CEMS when an immediate replacement is required due to a CEMS component failure (e.g., and emergency repair or replacement). According to the currently required recertification process defined by paragraph (f)(2) (depicted by Figure 2-5), a CEMS modification could be put on hold for up to 30 days in anticipation of an initial approval. As such, without a properly operating CEMS, the delay in the CEMS modification would result in an emission data loss and an adverse impact on CEMS data availability.

PR 218.2 (f)(3) proposes a recertification process for a CEMS modification that is required for the CEMS to operate properly and when the modification takes place within 30 days from the time the CEMS failed. According to this alternative recertification process, an initial approval would not be required prior to the CEMS modification and the owner or operator of the CEMS would be allowed to start the modification after submitting a written notification to the Executive Officer. However, after this necessary modification, the owner or operator of the CEMS will be required to comply with the recertification process similar to paragraph (f)(2) with the application form due within 30 days of the CEMS modification.

Recertification or Alternative Process for a CEMS Modification

Currently under R218 and 218.1 the Executive Officer determines if a full certification process is required when a modification to the CEMS occurs. After the final approval of the certification for a new CEMS, any future modification to the CEMS will either trigger a recertification requiring an application or trigger an alternative process not requiring an application. To clarify the recertification process, PR 218.2 includes criteria that would determine CEMS modification recertification process approval. In addition, PR 218.2 includes a new definition "CEMS Final Certification Letter". This definition identifies the minimum information that should be listed on a CEMS certification letter receiving final approval.

For a CEMS modification on a component that is identified in the CEMS final certification letter, the recertification process specified in PR 218.2 subparagraph (f)(2) or (f)(3) would be required. These modifications are expected to better ensure CEMS integrity in providing quality assured data.

For a CEMS modification on a component that is not identified on the CEMS final certification letter but is listed on the South Coast AQMD Technical Guidance Document R-002, a simplified alternative process defined by PR 218.2 subparagraphs (f)(8) would be required. This simplified process involves three steps: (1) notifying the Executive Office prior to the modification; (2) conducting the required quality assurance tests in accordance with the South Coast AQMD Technical Guidance Document R-002 (TGD R-002); and (3) submitting the test report for the Executive Officer's review. The notification prior to the modification provides the Executive Officer an opportunity to evaluate the impacts on CEMS performance, confirming or denying whether the simplified process can be applied. If the Executive Officer deems that the modification does significantly impact the CEMS performance, then the full certification process would be required as specified under PR 218.2 subparagraph (f)(9).

For a CEMS modification on a component that is not identified in the CEMS final certification letter or listed in the South Coast AQMD Technical Guidance Document R-002 but is listed in the Quality Assurance/Quality Control Plan, an even more simplified alternative process defined by PR 218.2 subparagraphs (f)(10) can be applied. In this process, the owner or operator of the CEMS

would notify the Executive Officer of the modification prior to the change, and then start the modification without prior approval. However, the Executive Officer reserves the opportunity to evaluate the modification and require additional tests as needed.

Referencing Part 60 Appendices B and F Provided by Rule 218

Rule 218 subparagraph (c)(1)(B) provides an option to allow the less stringent certification and ongoing QA/QC requirements of Part 60 Appendices B and F for CEMS certification and ongoing QA/QC requirements. This option would also relieve the owner or operator of the CEMS from complying with the corresponding provisions in Rule 218.1 but would still maintain compliance with Rule 218 (e) and (f) recordkeeping and reporting requirements.

Some differences have been identified between Rule 218.1 and Part 60 Appendices B and F for requirements on CEMS certification and ongoing QA/QC. First, there are certification tests required by Rule 218.1 but not by Part 60. These tests include system bias check, NOx conversion, response, and systems without a CEMS enclosure. In addition, there are more stringent standards for certification and QA/QC tests in Rule 218.1, as compared to Part 60. These tests are as follows:

- ✓ For the carbon dioxide analyzer 7-day calibration drift test, Rule 218.1 requires the test to meet the standard for all days, while Part 60 requires the same standard for only 6 out of 7 days.
- ✓ For CEMS out-of-control triggering point by failing daily calibration, Rule 218.1 requires the calibration error to be within 2 times the performance standard for any one test. By contrast, Part 60 allows 2 times the same performance standard over five consecutive days or 4 times the performance standard for any one test before deeming a CEMS to be out-of-control.
- ✓ For the relative accuracy test audit (RATA), Rule 218.1 relative accuracy standard is more stringent for diluent gas. Furthermore, Rule 218.1 requires criteria and approval for rejecting any run, while Part 60 allows the tester to reject up to 3 runs at their discretion.

There are some differences between Rule 218.1 and Part 60 in the number and types of required certification tests. The additional certification tests are important in demonstrating the accuracy and reliability of the system. In practice, non-RECLAIM CEMS have all been certified according to the same criteria, no matter if the owner or operator of the CEMS has opted to comply with the Rule 218.1 or Part 60 Appendices B and F requirements. In practice, staff has utilized and referenced the South Coast AQMD certification testing guidance document in working with the owner or operator of the CEMS to obtain CEMS certification. Application of the guidance document includes the previously mentioned certification tests required by Rule 218.1, but not by Part 60.

The QA/QC test methods are consistent in Rule 218.1 and Part 60. There are differences in the standards for the test results. Given the QA/QC test method consistency and the current practice of utilizing the abovementioned certification testing documents, it is feasible for the owner or operator of the CEMS who opted for the Part 60 requirement to meet the Rule 218.1 standards.

Removing the Part 60 option would not have an impact on the data acquisition and handling system (DAHS). PR 218.2 and 218.3 implements the valid hour and hourly average method as specified in Part 60.

The publicly owned sewage-water-landfill facilities expressed a concern for removing the Part 60 option, especially for the CEMS out-of-control triggering point by failing daily calibration. The unique administration and operation structure of this type of facility poses a challenge on making corrective action immediately for a failed calibration error for certain days.

With above analysis, it is proposed to remove the Part 60 option for certification and ongoing QA/QC requirements, except the CEMS out-of-control triggering point by failing daily calibration for the publicly owned sewage-water-landfill facilities as specified in PR 218.3 (i)(6).

Data Validity for the Interim Period

Rule 218 does not specify for the validity of the CEMS data recorded during the interim period when the CEMS is being certified or recertified. PR 218.2 (f)(11) allows all the emission data measured and recorded by the CEMS to be considered valid for compliance purposes, beginning at the hour of when the calibration error test is passed. The calibration error test for this purpose must be passed before any of the required recertification tests have commenced, but no longer than 14 days prior to the completion of all the required certification tests. However, if the Executive Officer disapproves the final CEMS certification or recertification, all the valid emission data would be retroactively considered invalid. This provision aligns with the Part 75 requirements.

PR 218.2 (f)(13) clarifies the criteria for certifying a SCEMS and adds criteria for certifying a time-shared CEMS and an ACEMS. Paragraph (f)(13) codifies the criteria which is currently being implemented in practice.

PR 218.2 (g) - QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN

Based on Rule 218 paragraph (c)(4) for QA/QC plan requirements, PR 218.2 subdivision (g) provides additional details in paragraph (g)(1) on what must be included in the plan and in paragraph (g)(3) for the requirements of a revised plan. The guidance document "Guidelines for Continuous Emission Monitoring System Quality Assurance and Quality Control Plan" is an existing document, which will be posted on the South Coast AQMD webpage along with other CEMS guidance documents.

PR 218.2 (h) - RECORDKEEPING REQUIREMENTS

PR 218.2 subdivision (h) provides additional clarity regarding recordkeeping requirements for data and files that should be maintained.

PR 218.2 (h)(1) requires maintenance of records for all raw and processed data that PR 218.3 specifies for the Data Acquisition and Handling System. This also includes data for any compliance demonstrations. PR 218.2 (h)(2) also requires maintaining records of reports, CEMS deviations, maintenance and repair, and activities according to the QA/QC plan that would be needed for compliance demonstration or system evaluation. As required under Rule 218, all the records must be maintained for a minimum period of two years unless otherwise specified.

PR 218.2 (i) - REPORTING REQUIREMENTS

PR 218.2 subdivision (i) reporting requirements is based on Rule 218 subdivision (f). This subdivision retains the requirements for semi-annual reporting under paragraph (i)(1), reorganize the rule structure for clarification, specify the reporting period, and move the rule language related to recordkeeping to PR 218.2 subdivision (h). It is also proposed to retain the requirements for excess emission reporting under paragraph (i)(2) with minor changes. In addition, the requirements

for CEMS failure reporting under paragraph (i)(3) would be retained but the required information for the report would be specified.

New provisions are proposed under paragraphs (i)(4) and (i)(5). Contingent on PR 218.2 (e)(3), which allows a CEMS shutdown during a scheduled unit shutdown that lasts for a minimum 168 consecutive hours, the requirement under paragraph (i)(4) would ensure that the owner or operator of the CEMS notifies the Executive Officer and submits a written report. The requirement under paragraph (i)(5) for Relative Accuracy Test Audit Reporting is an existing requirement by Rule 2012 for RECLAIM CEMS but it is a new requirement for non-RECLAIM CEMS.

PR 218.1 subdivision (i) specifies the excess emission and CEMS failure reporting under paragraphs (i)(2) and (i)(3), as well as the initial and final notification under paragraph (4), as notification by calling 1-800-CUT-SMOG.

PR 218.2 subdivision (i) does not specify the written reporting format. However, staff is planning to develop electronic reporting and enable owners or operators of the CEMS to submit the reports through the South Coast AQMD website using streamlined reporting forms. Staff will have further discussion with the stakeholders regarding this when the electronic reporting development work commences.

PR 218.2 (j) - POSTING OF WRITTEN APPROVAL OF CEMS CERTIFICATION

PR 218.2 subdivision (j) is based on Rule 218 subdivision (g). There is no change proposed to these requirements which requires that a CEMS certification letter for the CEMS is equivalent to a Permit to Operate for an CEMS unit. The certification letter will be posted in a manner prescribed in Rule 206, and any alternative posting manner would require the Executive Officer's approval.

PR 218.2 (k) - EXEMPTION

A South Coast AQMD source-specific rule or permit condition may define different CEMS requirements that are specified in PR 218.2, most commonly on the emissions data averaging method. Different CEMS requirements can also include other CEMS specifications. For example, Rule 1110.2 - Emissions from Gaseous- And Liquid-Fueled Engines defines different implementation dates and testing schedule. In these cases, the requirements defined by the source-specific rule or permit condition will supersede the corresponding requirement specified in Rule 218.2, unless otherwise notified by the Executive Officer.

CHAPTER 3: PROPOSED RULE 218.3

PROPOSED RULE REQUIREMENTS

INTRODUCTION

PR 218.3 is based on Rule 218.1, with a focus on performance specifications. PR 218.3 incorporates: (1) revisions to the provisions retained from Rule 218.1; and (2) a new subdivision (i) on data handling requirements. Subdivision (i) provides specifications on the data handling method for emissions measured below 10 percent or above 95 percent of the upper span value, emission date averaging method, CEMS data availability requirements, and CEMS out-of-control period and alternative data acquisition.

PR 218.3 (a) - PURPOSE

This subdivision describes the purpose of PR 218.3 which is to establish performance specifications for certification and quality assurance and quality control programs for CEMS. Although Rule 218.1 does not explicitly describe its purpose, this subdivision expresses the same intended purpose of Rule 218.1.

PR 218.3 (b) - APPLICABILITY

PR 218.3 subdivision (b) is identical to PR 218.2 subdivision (b), which retains the concept of the applicability under Rule 218, but provides further clarification. Although Rule 218.1 does not have this subdivision, this was added to PR 218.3 consistent with most South Coast AQMD rules. See discussion for PR 218.2 subdivision (b) in this report for more details.

PR 218.3 (c) - DEFINITIONS

Table 3-1 lists the definitions that have been removed or added in PR 218.3, as compared to the list definitions in Rule 218.1. Definitions were removed because they either were no longer used in the rule or are now integrated into the provision. Definitions were added because it is a new terminology used in the rule or to provide additional clarification. There are also several definitions (e.g., DILUENT GAS and RELATIVE ACCURACY TEST AUDIT) that are being revised. The revisions are to provide clarity, but the meaning is the same. Equations that were incorporated in certain definitions have been moved to Table 3 of PR 218.3 which includes a list of equations used in PR 218.3.

Table 3-1: Comparison of PR 218.3 and Rule 218.1 Definitions that are Removed or Added

	Definitions
Definitions Removed	• CALIBRATION CHECK • CEMS AVAILABILITY PERCENTAGE • CERTIFIED GAS MIXTURE • CONTINUOUS MONITORING • FULL SPAN RANGE • MODIFICATION REQUIRING RECERTIFICATION • OPERATIONAL PERIOD • RELATIVE ACCURACY AUDIT (RAA) • ROUTINE MAINTENANCE • SYSTEM FAILURE • ZERO CHECK • ZERO DRIFT (ZD)
Definitions Added	• ACEMS • CEMS MODIFICATION • LOWEST VENDOR • GUARANTEED SPAN RANGE

	Definitions
	• MAINTENANCE • RECLAIM • RECLAIM FACILITY • FORMER RECLAIM FACILITY • PUBLICLY OWNED SEWAGE-WATER-LANDFILL FACILITY • SPAN RANGE • UPPER SPAN VALUE • UNIT • UNIT OPERATING HOUR

PR 218.3 (d) - IMPLEMENTATION SCHEDULE

PR 218.3 subdivision (d) is identical to PR 218.2 subdivision (d) for implementation schedule. A detailed description of the implementation schedule is provided under the discussion for PR 218.2 subdivision (d).

PR 218.3 (e) - PRE-CERTIFICATION REQUIREMENTS

Prior to the certification testing, the owner or operator of a CEMS must comply with the pre-certification requirements for CEMS location, sampling location, analyzer span range setting, and data acquisition and handling system configuration. The same requirements are specified in Rule 218.1 with regards to CEMS location and sampling location. However, PR 218.3 has new requirements proposed for the analyzer span range setting and data acquisition and handling system configuration.

CEMS Location and Sample Location – Paragraphs (e)(1) and (e)(2)

PR 218.3 paragraphs (e)(1) and (e)(2) address CEMS location and sample location. These requirements are based on Rule 218.1 subparagraphs (b)(1)(A) and (b)(1)(B). There are not any proposed changes to the requirements. However, the rule language has been rearranged to streamline the provisions to improve the clarity.

Span Range – Paragraph (e)(3)

Rules 218 and 218.1 use the term “full span range” defining it as “the full range of values or data display output that a monitor component is certified to measure”. PR 218.2 and 218.3 replace the term “full span range” with “span range” and “upper span value” to avoid confusion between the range and value, without changing the meaning. “Span range” is defined as “the full range that is 0 to 100% of the data display output that a monitor component has been calibrated to measure”, and “upper span value” is defined as “the upper range value of a span range that is 100% of the data display output that a monitor component has been calibrated to measure”.

Span Ranges - Subparagraphs (e)(3)(A) and (e)(3)(B)

Similar to both Rule 218.1 and Rule 2012, PR 218.3 subparagraph (e)(3)(A) requires a span range to be set such that all data points fall within 10 to 95 percent of the upper span value for the measurement to be valid. Emissions falling below 10% of the upper span value is quantified with a specific procedure or reported at 10% of the upper span value.

Also similar to Rule 218.1, PR 218.3 subparagraph (e)(3)(B) requires the upper span value for contaminant monitors to be set between 150 to 200 percent of the allowed concentration limit, or

at a value approved by the Executive Officer. Rule 2012 does not have this requirement, in that RECLAIM CEMS are not used to demonstrate compliance with concentration limits as in a command-and-control regulatory structure.

Alternative Span Range - Subparagraph (e)(3)(C)

There are situations in which PR 218.3 requirements under subparagraphs (e)(3)(A) and (e)(3)(B) cannot be satisfied simultaneously. This situation will occur when the normal concentration of the air contaminant emitted is significantly less than the allowable concentration limit. For example, for a boiler with a Rule 1146 CO emission limit at 400 ppm could have CO emissions monitored between 10 to 20 ppm. For this situation, a multiple span range CO analyzer would be required.

When PR 218.3 (e)(3)(A) and (e)(3)(B) cannot be satisfied simultaneously, PR 218.3 subparagraph (e)(3)(C) exempts the owner or operator of the CEMS from subparagraph (e)(3)(A) and requires that the analyzer shall be set at a span range approved by the Executive Officer. That is, an additional span range would not be established and the monitored data would be allowed to fall at or below 10 percent of the upper span value. It is not critical to quantify data below 10% of the upper span value to show compliance status. The owner or operator of the CEMS can either quantify the data with a PR 218.3 Appendix A procedure or report the measurements at 10% of the span range.

Span Range for Low Concentration Limits - Subparagraph (e)(3)(D)

Stakeholders have expressed concerns on the current span range requirements when measuring very low concentration limit. For example, the most recent amendments to Rules 1135 and 1134 require 2 ppm or 2.5 ppm NOx limits for turbines. Setting a span range with this low concentration limit would require calibration gas at a value less than 4 ppm. These concerns include the availability of low concentration calibration gas, and the challenge to meet performance standards for an extremely low span range. To address the impacts resulting from low concentration emissions, PR 218.3 subparagraph (e)(3)(D) will allow an alternative span range to be set upon Executive Officer's approval. This approval will be based on: (1) unit concentration limit at or below 5 ppm; and (2) new span range not higher than 10 ppm.

For a CEMS air pollutant analyzer with multiple span ranges, the higher span range for a dual range analyzer or the highest span would capture spiking emissions. Spiking emissions most likely occur during startup, shutdown, or during other uncontrolled periods such as a unit malfunction. PR 218.3 subparagraph (e)(3)(E) will exempt the higher span range (if it is a dual range analyzer) or the highest span from span range requirements specified under subparagraphs (e)(3)(A) through (e)(3)(D), if the other analyzer span range(s) are set pursuant to subparagraphs (e)(3)(A) through (e)(3)(D).

Data Acquisition and Handling System – Paragraph (e)(4)

There are currently two major types of Data Acquisition and Handling System (DAHS) software: (1) DAHS software for complying with Rule 2011 and 2012 RECLAIM CEMS requirements, and (2) DAHS software for complying with R218 and 218.1 non-RECLAIM CEMS requirements.

Currently Rules 218 and 218.1 do not specify data handling but provide an option for the CEMS to reference Part 60 Appendix B and F for certification and QA/QC requirements. As a result, owners or operators of the non-RECLAIM CEMS utilize Part 60 for DAHS software.

Non-RECLAIM and former RECLAIM CEMS will be required to comply with PR 218.2 and 218.3 DAHS software requirements, according to the implementation schedule specified in

paragraph (d). Subdivision (i) of PR 218.3 specifies the data handling requirements, addressing data points below 10% or above 95% of the upper span value, emission data averaging, CEMS data availability, and CEMS out-of-control period.

The following PR 218.3 data handling requirements have already been incorporated in the existing DAHS software:

- ✓ Identifying and handling data points below 10% of span range by RECLAIM and non-RECLAIM CEMS DAHS;
- ✓ Identifying Data points above 95% of the upper span value by RECLAIM CEMS DAHS;
- ✓ Conducting emission data averaging as proposed by non-RECLAIM CEMS DAHS; and
- ✓ Specifying CEMS out-of-control period by RECLAIM CEMS DAHS

There are data handling requirements in PR 218.3 that are unique and not currently implemented by the South Coast AQMD or other regulatory agencies. These data handling requirements may require additional DAHS software reprogramming:

- ✓ For data points above 95% of the span range (spiking data), calculating the percent of spiking data on a quarterly basis, recording those data points as 95% of the span range, and identifying them as valid data; and
- ✓ Calculating CEMS data availability on a quarterly basis instead of an annual basis (as currently required) and excluding the newly defined exemption hours from the calculation.

The following data handling requirements in PR 218.3 may cause changes to existing CEMS DAHS software, however the change would be minimal as they have been implemented by other CEMS:

- ✓ Identifying Data points above 95% of span range by certain non-RECLAIM CEMS DAHS;
- ✓ Conducting emission data averaging as proposed for RECLAIM CEMS;
- ✓ Adjusting CEMS data availability calculation equation as proposed for RECLAIM CEMS. It should be noted that the misinterpretation at the previous equation has resulted in a data availability over 100 percent; and
- ✓ Embedding semi-annual report required by paragraph (h)(1) of PR 218.2 to be generated automatically. The permit holders and operators also have the option to prepare the report outside of DAHS without further change to the software.

Staff relied upon input from several CEMS and DAHS vendors in assessing feasibility and costs associated with the previous mentioned software changes.

These vendors support the emission data averaging method proposal in aligning with Part 60 and Part 75 and have informed staff that the data handling module ready to be incorporated into a CEMS DAHS. Vendors have accounted for spiking data and CEMS data availability and although the proposed requirements have not been previously implemented, the DAHS software can address these revisions. In addition, while most of the changes are general to all types of CEMS, the software change to incorporate the startup and shut down exempted hours in data availability calculation will be facility specific, requiring customization of the DAHS software. This additional work is due to the uniqueness of the startup and shut down exemption by the facility's permit condition. It is understood that the startup and shut down exemption from CEMS data availability calculation is desired by the owners and operators of the CEMS in maintaining the data availability under the 95% threshold.

CEMS data availability should not be significantly impacted by the new DAHS integration. However, as an extra precaution, facilities generally choose to conduct the integration during offline time when the unit is not generating emissions. Alternatively, the owner or operator of the CEMS may conduct the integration towards the end of the data availability calculation period (calendar quarter by PR 218.2/218.3) when the owner or operator of the CEMS is confident that the CEMS data availability would be maintained well above 95 percent.

Vendors have not expressed any concerns regarding their capability of implementing PR 218.2 and 218.3. They normally handle a large number of projects simultaneously and feel comfortable that they will be able to meet the demands that will occur due to the requirements specified in PR 218.2 and 218.3.

Operational Period – Paragraph (e)(5)
Similar to Rule 218.1 subparagraph (b)(1)(F), this provision requires that the CEMS operational period prior to any certification tests shall be minimum of 168 continuous hours.

PR 218.3 (f) - CERTIFICATION REQUIREMENTS AND PERFORMANCE SPECIFICATIONS FOR NEW OR MODIFIED CEMS
PR 218.3 subdivision (f) specifies the certification test requirements. Most of the revisions are designed to codify current practices for certification and performance specifications for new or modified CEMS to ensure quality performance of the CEMS. For each CEMS application, the South Coast AQMD staff works closely with the owner or operator of the CEMS to provide guidance to maximize the CEMS performance. It should be noted that PR 218.2 and 218.3 do not provide specifications on mass emission monitoring. Therefore, the CEMS in need of a bias test for adjusting mass emission calculation will continue to be subject to the applicable requirements specified in Rules 2011 and 2012.

PR 218.3 does not change current test procedures, but there are revisions to the performance specifications which were established several decades ago. With the progression of emission control technologies, substantially lower emission rates are being achieved as compared to the past two decades.

During the Working Group Meetings, stakeholders expressed concerns in achieving the existing specifications for the 7-day calibration drift and linearity error tests for CEMS monitoring units with low emission limits. With these lower unit emission limits the NOx and CO *de minimis* standards should be revised. The proposed rule language also harmonizes requirements with Part 75 and provides more clarification for existing requirements.

Seven-day Calibration Drift Test – Paragraph (f)(1)
The seven-day calibration drift test under paragraph (f)(1) is based on Rule 218.1 subparagraph (b)(2)(A). This test is comprised of a series of eight calibration error tests during seven consecutive CEMS operating days, with the test performed once each day, and at the beginning and end of this period. No manual or automatic adjustment is allowed during each calibration error test before the high scale calibration is completed or during any part of this seven-day calibration drift test.

The calibration error for any of the calibration error tests, must not exceed 2.5 percent of the upper span value for pollutant and dilution gas analyzers and 3.0 percent of the upper span value for flow monitors. The equation for the calibration error test is specified as Equation 1 in Table 3.

Several stakeholders have commented that it is challenging to meet the 2.5 percent standard with an upper span value at or below 10 ppm. Stakeholders commented that the 2.5 percent standard is more stringent than the 5.0 percent standard for the calibration error test conducted as part of the ongoing QA/QC, which is also known as daily calibration.

Staff reviewed 7-day calibration drift test reports for NOx emission levels ranging from 2 ppm to 50 ppm, and did not find any difficulty in the CEMS to measure lower emissions to meet the 2.5 percent standard. Staff requested but did not receive reports from stakeholders showing failing results. Stakeholders recommended, and staff agreed, that the cutoff level for determining the alternative (*de minimis*) standard should be 10 ppm of upper span value for NOx analyzers.

At the August 1, 2019 Working Group Meeting staff recommended 0.3 ppm as an alternative standard for 7-day calibration drift test. This is the difference between the CEMS response to a calibration gas and its known value. The recommendation was based on the stakeholders' suggested 10 ppm NOx upper span value as the cutoff level. The calculated difference of calibration gas value and CEMS response at this level with the existing standard of 2.5 percent of the upper span value is $|C - A| = SR \times CE = 10 \times 2.5\% = 0.25\ ppm$. The alternative standard is the difference of 0.25 ppm, rounded to 0.3 ppm. However, stakeholders commented that it is still difficult to meet the recommended 0.3 ppm alternative standard, and some other stakeholders commented that there should be data to support the recommendation.

At the September 12, 2019 Working Group meeting staff withdrew the previously recommended alternative standard (0.3 ppm). If stakeholders had provided supporting data showing the inability to comply with the standard, then staff would have considered an alternative proposal. However, no such data was provided. In the absence of such data and subsequent discussions among staff, it was concluded that such claims of compliance difficulties lacked credibility and that the existing standard would be maintained. It should be noted that the existing 7-day calibration drift standard (2.5% of the span range) is universally referenced by the US EPA and other regulatory agencies.

Analyzer Enclosure – Paragraph (f)(2)

PR 218.3 paragraph (f)(2) specifies the requirements for the analyzer enclosure. These requirements are based on Rule 218.1 subparagraph (b)(2)(B). The rule language was reorganized to improve the clarity and streamline provisions. A requirement was added that requires the owner or operator of the CEMS to provide corrective actions within 8 hours of receiving the audible alert when temperature drift exceeds the manufacturer's recommended specifications for the analyzer enclosure.

Performance Standards for Relative Accuracy Test Audit (RATA) – Paragraph (f)(3)

PR 218.3 subparagraph (f)(3) will maintain the following relative accuracy standards that are based on Rule 218.1 subparagraph (b)(2)(C):

- Ten (10) percent for O2/CO2 concentration;
- Twenty (20) percent for pollutant concentration or mass emission; and
- Fifteen (15) percent for stack flow.

In addition, the following changes are incorporated in PR 218.3 paragraph (f)(3):

- Specifies the calculations for *de minimis* standards by Equations 5, 6, and 7 in Table 3 of PR 218.3;

- Maintains Rule 218.1 *de minimis* standards, but adds a *de minimis* standard of 1.0 percent for CO2 and reduces the current *de minimis* standard from 1.0 ppm to 0.5 ppm for NOx concentration limit at or below 5.0 ppm;
- If the measured O2/CO2 concentration is at or below 15 percent, allow a relative accuracy standard of 20 percent for O2/CO2 concentration with Executive Officer's approval; and
- If the CO emission limit is lower than 2.0 ppm, allow the *de minimis* standard for CO concentration as the unit's CO emission limit.

The *de minimis* for the NOx concentration is calculated as |d|+|cc|[1]. Under Rule 218.1, the standard is 1.0 ppm. This standard is no longer appropriate when the NOx emission limit is very low (e.g., 2 ppm for a combined cycle turbine). A review of 189 RATA sets of results that the South Coast AQMD received over the past two years for turbines, found that 171 sets of RATA tests have *de minimis* at or below 0.5 ppm. For the remaining 18 RATA tests, 11 tests were for CEMS measuring NOx emissions above 22 ppm which are not considered low emitters that are in need of a *de minimis* standard. The remaining 7 tests were failed tests. Based on this analysis, it is recommended to lower the NOx *de minimis* standard from 1.0 ppm to 0.5 for units with NOx emission limit at or below 5 ppm.

The relative accuracy standard in Rule 218.1 is 10 percent for O2/CO2 concentration, as compared to 20 percent in both Rule 2012 and Part 60 Appendices B and F. The majority of the CEMS that will be subject to PR 218.2 and 218.3 currently reference Rule 2012 and Part 60 Appendices B and F for performance standards. Relative accuracy testing becomes more challenging when the measured diluent gas concentration is low. Therefore, it is proposed to maintain the 10 percent relative accuracy standard for O2/CO2 at higher concentrations. However, when the diluent gas concentration is at or below 15 percent, the owner or operator of the CEMS would be allowed to use a 20 percent relative accuracy standard for O2/CO2 concentration.

Currently, the *de minimis* standard in Rule 218.1 is 2.0 ppm for CO. As previously mentioned, the South Coast AQMD has recently permitted several units with a CO emission limit at 1.5 ppm. PR 218.3 sets the *de minimis* for CO concentrations as the unit's emission limit when the limit is lower than 2.0 ppm. For example, if the CO emission limit of a unit is 1.5 ppm, a *de minimis* standard of 1.5 ppm for CO concentration would apply.

Other Tests Required for the Relative Accuracy Test Audits – Paragraph (f)(4)

PR 218.3 paragraph (f)(4) is based on Rule 218.1 paragraph (b)(3), but no longer requires an interference check that is not generally implemented in practice. Paragraph (f)(4) has added a requirement for a NOx converter efficiency test and sampling system bias check. Although a NOx converter efficiency test is required by Rule 218.1 (d)(5) there is no specification on when this test should be conducted. In practice, the owners or operators of the CEMS have being instructed to conduct these tests along with each relative accuracy test audit as they are considered essential to ensure CEMS performance.

There are no changes to concentration stratification requirements. The technical details provided under Rule 218.1 subparagraph (b)(3)(C) are now presented in Attachment B to PR 218.3.

[1] d = average of differences between the NOx concentration measurement system reading and the corresponding reference method in ppmv; cc = confidence coefficient as determined by the equations in Section 8 of 40 CFR Part 60, Appendix B, Performance Specification

Linearity Error Test – Subparagraph (f)(4)(F)

With the advancement of some technologies, not only NOx emissions are lowering, but CO emissions are also approaching lower levels for certain types of equipment. Based on existing permits for turbines, CO emission limits for several new installations are at 1.5 ppm. During the CEMS certification testing for these units, operators have found it difficult to pass the linearity test.

Passing the linearity check for low emitting sources is more challenging for CO as compared to other pollutants. The detection sensitivity for CO analyzers are not as robust as NOx analyzers. Moreover, Rule 218.1 linearity check standard is more stringent than the standards for some of the other tests. In comparing the linearity check with calibration error and RATA test, CEMS subject to Rule 218.1 is more likely to fail the linearity check than the calibration error and RATA test. The reason for this high failure rate is that the calculation equation for calibration error test use the upper span value (vs. calibration gas reference value for linearity check) as the denominator, which is a (higher value as a denominator than using calibration gas reference value. For the RATA test, there is an additional option for low emitters to refer to the *de minimis* standards.

The current requirement in Rule 218.1 (a)(15) defines linearity as a percentage, by calculating the difference between the mean response and reference value with respect to the reference value. For an analyzer with a 5 ppm upper span value, the reference value would be 1 to 1.5 ppm for the low level check (20-30% of the span). This value is so low that a minor variation can result in a highly qualified analyzer to fail.

Based on this information, subparagraph (f)(4)(F) proposes to incorporate a new calculation equation (i.e., Equation 3a in Table 3 of PR 218.3) for the linearity error test. For an air pollutant analyzer with the upper span value at or below 5 ppm, the linearity error standard should be defined as 5.0 percent of the upper span value as calculated by Equation 3a in Table 3. For an air pollutant analyzer with the upper span value higher than 5 ppm, the linearity error standard remains unchanged as 5.0 percent of the calibration gas concentration reference value as calculated by Equation 3 in Table 3.

Alternative Continuous Emission Monitoring System (ACEMS) – Paragraph (f)(5)

ACEMS is an emissions monitoring system that does not directly monitor emissions like a CEMS. Instead, an ACEMS utilizes process operating parameters and sensor inputs to calculate emissions via modeling.

ACEMS is also known as a predictive emissions monitoring system (PEMS) based on U.S. EPA guidelines on testing requirements for assessing the acceptability of PEMS. PEMS specifications can be found in U.S. EPA 40 CFR Part 60 Performance Specification 16 and Part 75 Subpart E. With regards to South Coast AQMD rules, Rules 218 and 218.1 do not regulate ACEMS. Rule 2012 Chapter 2 requires the ACEMS to be certified according to the criteria specified in 40 CFR Part 75 Subpart E.

Currently, in the South Coast AQMD there are eight ACEMS certified through Rule 2012. When the facilities with these ACEMS exit from RECLAIM, these ACEMS would be subject to PR 218.2 and 218.3. On this basis, staff proposes to incorporate the same requirements specified in Rule 2012 Chapter 2 for ACEMS into PR 218.2 and 218.3.

For the ongoing QA/QC, an ACEMS differs from a CEMS with regards to the daily assessment requirement. The daily assessment for an ACEMS is a check on the modeling software to verify

that the emission values generated by the ACEMS modeling software are consistent as certified. This assessment is generated on the software level, and do not require calibration gas injection. Additionally, the owner or operator of an ACEMS would need to conduct periodical calibration to the ACEMS sensors according to the schedules and procedures recommended by the manufacturers.

PR 218.3 (g) - QUALITY ASSURANCE TESTING REQUIREMENTS AND SPECIFICATIONS

Calibration Error Paragraph – (g)(1)

During the Working Group Meetings, there was a discussion on the frequency in which the calibration error should be conducted as part of ongoing QA/QC, as well as requested clarifications on the required time intervals between subsequent calibration error tests.

With regards to calibration error for pollutant and diluent analyzers, Rule 218.1 clause (b)(4)(A) requires one test each day "as close to 24-hour intervals as practicable", while Rule 2012 requires two adjacent tests "to the extent practicable, approximately 24 hours apart". On the other hand, Part 75 specifies the test to be conducted every 24 hours with a 2-hour grace period, which means the adjacent two tests should not be more than 26 hours apart. Stakeholders had commented that the existing provisions in Rule 218.1 and Rule 2012 are vague and asked if there could be consideration for a grace period.

Staff agreed that the existing rule language, "as close to 24-hour intervals as practicable" or "approximately 24 hours apart", is vague. Therefore, PR 218.3 includes a 2-hour grace period which will allow up to 26 hours for the owner or operator of the CEMS to pass a calibration error test. Staff also proposes a 4-hour grace period at unit restart after one or more unit non-operation days.

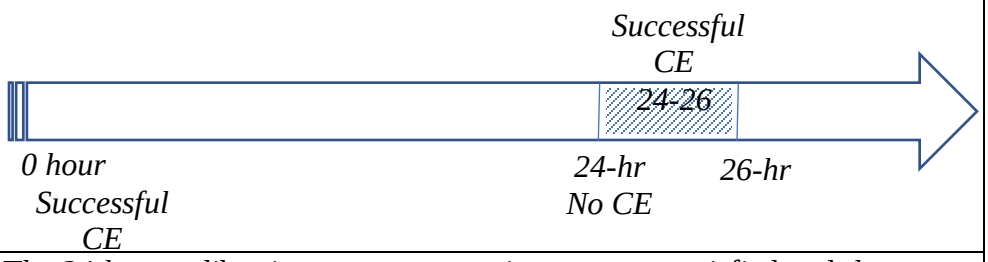
With regards to monitoring data validity as related to this test, it is proposed that each successful 24-hour calibration error test validates up to 26 hours. However, any failed test within the 26-hour window would invalidate the subsequent data until the next successful test.

To clarify the concept, staff is providing the following two examples in Figure 3-1 to help explain the scenarios under this new proposal:

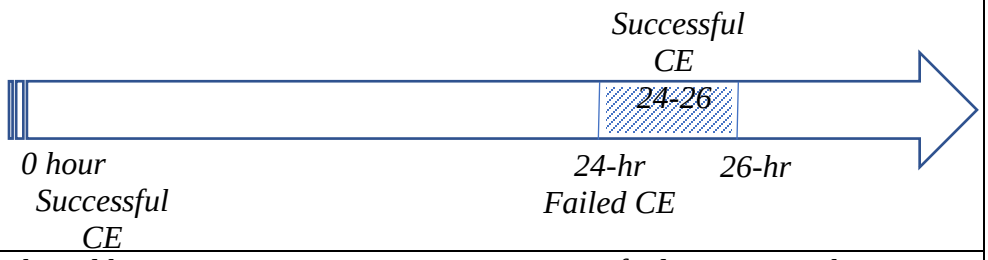
Figure 3-1: Examples for Calibration Error Test Grace Period and Data Validity

- Example 1

Scenario	A calibration error test, set in the software to be conducted automatically every 24 hours at a defined time, failed to be conducted at the defined time of a day due to an unknown reason. Subsequently, the owner or operator of the CEMS conducted and passed a calibration error which was within the 26-hour window since last successful calibration.

Pictorial Depiction of the Scenario	
Compliance Determination	The 24-hour calibration error test requirement was satisfied and there was no CEMS out-of-control period.

- Example 2:

Scenario	A calibration error test was conducted at the defined time of the day but failed because it was not meeting the calibration error standard. The owner or operator of the CEMS recognized the failed test and then conducted another test with passing result. This successful test was within the 26-hour window since the last successful calibration.
Pictorial Depiction of the Scenario	
Compliance Determination	The calibration error test requirement was satisfied. However, there was a CEMS out-of-control period, which began at the hour of the failed test and ends at the hour of the subsequent successful test.

With regards to calibration error for a stack flow monitor, Rule 218.1 specifies the calibration error standard, but does not specify how the test should be conducted. PR 218.3 clause (g)(1)(A)(ii) provides the manner in which the test is to be conducted in applying existing test specifications in Rule 2012 for RECLAIM CEMS stack flow monitors. The calibration error test for a stack flow monitor would be conducted by introducing a zero-reference value to the transducer or transmitter for every 14-day period.

Relative Accuracy Testing Audit (RATA) – Paragraph (g)(2)

As part of the ongoing QA/QC requirements, Rule 218.1 subparagraph (b)(4)(C) requires a RATA to be conducted once every 12 months, and no later than the end of the calendar quarter in which the date of the original certification test was performed. A concern was raised that it is not practical to refer to the original certification test date. To address this concern, PR 218.3 (g)(2) requires this test to be performed annually and no later than the end of the calendar quarter of the previous relative accuracy test. This proposed rule language no longer references the original certification test date. In addition, the RATA will be conducted in the as-found unit operating condition.

Stakeholders also requested to align PR 218.3 with the Rule 2012 for scheduling a RATA after a unit restart. As a result, PR 218.3 includes a provision that if the unit for which the CEMS is certified to monitor is not operating or generating emissions when a RATA is due, then the RATA would be allowed be performed within 14 days after the unit is restarted.

Cylinder Gas Audit (CGA) for Pollutant and Diluent Gas Analyzers – Paragraph (g)(3)
Currently, Rule 218.1 (b)(4)(D) requires a Cylinder Gas Audit (CGA), a provision that is not required in Rule 2012 for RECLAIM CEMS. However, Rule 2011 and 2012 requires a more frequent RATA and a RATA is considered more stringent than a CGA. It is not suggested to change the CGA test method and frequency required under Rule 218.1. PR 218.3 includes language to clarify that the linearity error check in compliance with 40 CFR Part 75 will be allowed in lieu of a CGA. PR 218.3 will not require a CGA for the quarter when the accumulative unit operating hours are no more than 168 hours.

Daily Check and Periodic Calibration for ACEMS – Paragraph (g)(4)
Daily checks and periodic calibration of ACEMS are currently not required under Rule 218.1 or Rules 2011 or 2012, but are conducted in practice. Unlike a regular CEMS that directly measures emissions, an ACEMS calculates emissions by a modeled equation using measured equipment operating parameters. As a result, instead of requiring a daily calibration specified in paragraph (g)(1), daily check and periodic calibration to the sensors are recommended by the ACEMS vendor and approved as part of the QA/QC plan by the Executive Officer.

Calibration and Checks for Stack Flow Monitor – Paragraph (g)(5)
Currently Rule 218.1 does not specify calibration error and other checks for the stack flow monitor. The proposed requirements under PR 218.3 paragraph (g)(5) are based on the existing requirements in Rules 2011 and 2012 for RECLAIM CEMS stack flow monitor.

Maintenance for Fuel Flow Meter – Paragraph (g)(6)
Within the context of this rule, a fuel flow measuring device is utilized for calculating stack flow in conjunction with a F-factor. Paragraph (g)(6) of PR 218.3 are not specified in Rule 218.1 or Rules 2011 and 2012, but are currently written in the CEMS QA/QC plan and conducted in practice.

PR 218.3 (h) - CALIBRATION GAS AND ZERO GAS

Calibration Gas – Paragraph (h)(1)
PR 218.2 and 218.3 requires that calibration gas will be utilized for various tests and procedures, such as system bias, linearity error check, calibration error test, and cylinder gas audit. The required pollutant concentration of the calibration gas corresponds to the CEMS analyzer span range (e.g., 0-20, and 80-100 percent of the upper span value for calibration error test). Since the emission limit of the unit is a determining factor for the CEMS span range, a lower emission limit means a lower concentration calibration gas would be required.

Stakeholders expressed a concern on the availability of very low concentration calibration gas. This concern has been raised because of the lower emission limits required by the South Coast AQMD rules, regulations, or permit conditions. For example, a turbine with a recently regulated NOx emission limit of 2 or 2.5 ppm would have its CEMS NOx analyzer's span range set at 5.0 ppm. For the calibration error test performed at the low range (0-20 percent of span range), calibration gas with NOx at 1.0 ppm or lower would be needed (i.e., 5.0 x 20% = 1.0 ppm). Calibration gas with NOx at 1.0 ppm is available but more commonly in a lower grade (e.g., a

research gas mix instead of a standard reference material) that is not permitted under Rules 218 and 218.1.

This concern is resolved in the application of two approaches. The first approach is to allow a higher span range for the CEMS monitoring a unit with low emission limit (e.g., at or below 5 ppm) upon Executive Officer's approval. This approach is addressed under the provision for span range. For a turbine with NOx emission limit at 2 or 2.5 ppm, the span range would be allowed to be set up to 10 ppm upon approval.

The second approach provides more certification testing options for calibration gas. This approach was based on staff's review of certification programs provided in other rules and regulations. The list of options for calibration gases under the specific rule or regulation is presented in Table 3-2.

Table 3-2: Required Certification Programs for Calibration Gas

Required Certification Programs for Calibration Gas			
Rule 2012	**40 CFR Part 60**	**40 CFR Part 75**	**Rule 218.1 (d)(1)**
• EPA Protocol gas • National Institute of Standards and Technology (NIST)/EPA approved standard reference materials (SRM) • Certified reference materials (CRM)	• EPA protocol gas	• A standard reference material (SRM); • A standard reference material-equivalent compressed gas primary reference material; • A NIST traceable reference material; • NIST/EPA-approved certified reference materials (CRM); • A gas manufacturer's intermediate standard; • An EPA protocol gas; • Zero air material; or • A research gas mixture	• EPA protocol gas • If not covered by the EPA protocol, submit the gas vendors alternative certification protocol for the specific compound or compounds upon the approval of EO • Compressed and/or filtered air, such as instrument air, may also be used in lieu of oxygen span gas under certain conditions

Under the PR 218.3 paragraph (h)(1) for calibration gas requirements, several options from 40 CFR Part 75 have been added. The owner or operator of the CEMS would be able to utilize the calibration gas identified in the following:

- ✓ EPA protocol gas
- ✓ A standard reference material;
- ✓ A standard reference material-equivalent compressed gas primary reference material;
- ✓ NIST traceable reference material;
- ✓ NIST/EPA-approved certified reference materials;
- ✓ If not covered by any of above programs, upon the approval of EO, facility may use NIST research gas mixture, gas manufacturer's intermediate standard, or gas manufacturer's alternative certification protocol for the specific compound or compounds

- ✓ Compressed and/or filtered air, such as instrument air, may also be used in lieu of oxygen span gas under certain conditions

Zero Gas – Paragraph (h)(2)
PR 218.3 paragraph (h)(2) addresses zero gas based on the requirements set forth in Rule 218.1 paragraph (d)(2). Zero gas can be used for the quality assurance test when the low range 0-20% span calibration gas is required. Normally, owners or operators of the CEMS use nitrogen gas as zero gas, which meets the zero gas definition and requirements for both gaseous air contaminant analyzers and diluent analyzers. There are no issues identified with the zero gas definition and requirement, and thus there are no proposed changes from the Rule 218.1 (d)(2) paragraph (d)(2) requirements.

PR 218.3 (i) - DATA HANDLING

Data Points Below 10 percent of the Upper Span Value – Paragraph (i)(1)
Requirements under paragraph (i)(1) remain unchanged from the existing requirements under Rule 218.1 clause (b)(1)(C)(v). Data below 10 percent of the upper span value can be reported at the 10 percent of the upper span value. An exception would be a multiple span range analyzer when the data is above the 95 percent, or within 10 to 95 percent of the upper span value of another span range.

Data Points Above 95 percent of the Span Range – Paragraph (i)(2)
During normal operation conditions, CEMS monitored data are expected to be within 10 to 95 percent of the upper span value. Rule 218.1(b)(1)(C)(vi) specifies that:

> "*Should any data points fall above 95 percent of FSR, the value shall be invalid for quantification and the CEMS shall be considered unavailable for the purposes of determining CEMS availability percentage. All excursions above 95 percent of FSR and the duration of these excursions shall be reported in the CEMS summary report as prescribed under Rule 218(f).*"

This requirement is consistent with the requirement in Rule 2012 for NOx CEMS of RECLAIM facilities.

In complying with this requirement under Rule 218.1(b)(1)(C)(vi), one-minute data points that are above 95% of the upper span value cannot be used during the calculation of data averaging to 15-minute, hourly, or any other intervals. Likewise, 15-minute or hourly data above 95% of the upper span value cannot be used for any subsequent calculation or compliance demonstration.

Concerns have been raised whenever spiking data points are discarded for emission calculation or compliance demonstration. This not only leads to data loss, but also underestimating averaged emissions. Additionally, it is difficult to estimate excess emissions, especially for longer periods of data spiking.

With respect to data analysis, staff reached out to stakeholders and collected one-minute data for CEMS monitoring various emission sources. Staff analyzed: (1) one-minute data for seven heaters using refinery gas for a one week period, (2) one-minute data for four engines using landfill gas for seven individual days when excess emissions were reported, and (3) three years of 1-minute spiking data summary for three engines that have frequent startups (100 to 200 startups a year). Most of the emission spiking incidents occurred at the time of startup and shutdown. There is a possibility of data spiking at load change, fuel change, or abnormal operating conditions. However,

these conditions were more likely to result in high emissions but were less likely to create spikes over 95% of the upper span value. With regards to data spiking frequency, less than 1 percent of one-minute data spiked over 95% of the upper span value for all the days being analyzed except for two days. For most operations, it is unlikely the one-minute spiking percentage over a calendar quarter basis would be over 1 percent. Given that 1 percent of operation equates to only 14.4 minute-periods, it is reasonably certain that 1 percent spiking emissions would not have a significant effect on the overall NOx emissions.

Based on the above mentioned findings, PR 218.3 paragraph (i)(2) proposes to report the one-minute spiking data at 95% of the upper span value, and consider this data as valid for calculations leading to quantification for compliance purposes and for CEMS data availability.

PR 218.3 paragraph (i)(2) also proposes to incorporate a backstop measure to prevent frequent occurrence of data spiking over 95% of the upper span value. It is also recommended that the CEMS data acquisition and handling system be set such that it flags all spiking data points (one-minute, 15-minute, or hourly), and calculates a spiking data percentage for each calendar quarter using the following equation:

Spiking Data Percentage = F/T x 100%

Where:

F is the amount of flagged one-minute data points recorded pursuant to clause (i)(2)(C)(i) for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit; and

T is the total amount of one-minute data points recorded for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit.

When the percentage exceeds 1% for any two calendar quarters (not necessarily sequential) in a consecutive four calendar quarter period and the total unit operating hours for each of those two quarters are more than 50 hours, another span range (a higher span) would be needed. The owner or operator of a CEMS would be required to maintain 1-minute emission data for at least two years to demonstrate compliance with this proposal, according to the recordkeeping requirement specified under PR 218.2 subdivision (h).

Data Validity for Measurements Below 10 Percent or Above 95 Percent of the Upper Span Value – Paragraph (i)(3)

Paragraph (i)(3) specifies data validity for measurements below 10 percent or above 95 percent of the upper span value. Data below 10 percent of the upper span value have been considered valid under Rule 218.1 and Rule 2012 and will continue to be considered valid under paragraph (i)(3). Data above 95 percent of the upper span value (spiking data) have been considered invalid under Rule 2012 (not specified in Rule 218.1). However, as discussed above for PR 218.3 (i)(2), those spiking data would be defined as valid data under paragraph (i)(3) if all quality assurance requirements are met.

Emission Data Averaging – Paragraph (i)(4)

For the hourly average calculation, the owners or operators of CEMS in the South Coast AQMD primarily adhere to one of the two methods. For SOx and NOx RECLAIM CEMS, the method is specified in Rule 2011 or Rule 2012, respectively. Non-RECLAIM CEMS are currently subject to

the requirements specified in Rules 218 and 218.1. Because Rules 218 and 218.1 do not have a provision specifying an emission data averaging method, the owners and operators of non-RECLAIM CEMS utilize the emission data averaging method specified in Part 60. Since Part 60 is aligned with Part 75 for EPA's Acid Rain Program on emission data averaging method, a CEMS that references Part 60 method essentially adhere to Part 75 method.

Staff compared the hourly average calculation methods by Part 60/Part 75 and Rule 2012 and have identified the differences as shown in Table 3-3:

Table 3-3: Comparing the hourly average calculation methods by Part 60 and Rule 2012

Requirement	Part 60/Part 75	Rule 2012
Hourly Average	Directly calculated from all valid one-minute data of the hour	• Each quadrant hour average is generated from all valid one-minute data of the quadrant hour; • The hourly average is calculated from all valid quadrant hour averages of the hour
Unit Operating Hour	• Including both full operating hours and partial operating hours; • In a partial operating hour, CEMS monitoring and recording is not required for the quadrant hour when the unit is not operating	• No concept of unit operating hour; • Requiring CEMS monitoring and recording at all time disregarding the unit operation status
Maintenance or QAQC Hours	• Requiring a minimum of one or two valid data points separated by more than 15 minutes depending on whether it is one or more than one quadrant hour with unit operation; • No limit on how many this type of hours allowed	• Requiring two valid quadrant hours which means at a minimum of two valid data points separated by more than 15 minutes; • Limiting a maximum of four maintenance or QAQC hours

PR 218.3 (i)(4) proposes to apply the Part 60/Part 75 emission data averaging method. This data handling method is widely used by other regulatory agencies. Based on discussions with the stakeholders, it is understood that the CEMS or Data Acquisition and Handling System (DAHS) vendors can readily make the modification to the RECLAIM CEMS that have applied a different data averaging method.

The Part 60/Part 75 emission data averaging method specifies how an hourly emission average should be determined. The emission limit for a source is typically based on the hourly emission average. There are some source specific rules that require demonstrating compliance for a different emission average time interval (e.g., 15-minutes in R1146).

Regarding emission averaging for a time interval other than 1-hour, PR218.3 (i)(4) proposes:

- A 15-minute interval, when emission data could be averaged for each 15-minute quadrant of the hour in which the unit operates, utilizing all valid data points; and
- An interval greater than 1-hour, when emission data could be averaged for the required interval utilizing hourly averages computed in accordance with PR 218.3 (i)(3).

Due to the uniqueness of various regulated sources and their operations, the emission averaging intervals and methods of other South Coast AQMD rules and permit conditions may differ from PR218.3 (i)(4) requirements. For these situations, with the Executive Officer's approval, the comparable requirement in the other rule or the permit condition would supersede the equivalent requirement of PR218.3 (i)(3), pursuant to the exemption provision under PR 218.3 (l).

CEMS Data Availability – Paragraph (i)(5)

CEMS data availability has been discussed in several Working Group meetings. Several aspects of this key topic include the calculation equation, hours to exclude, period covered for the calculation, and the 95 percent data availability threshold.

Rule 218.1 provides specifications on CEMS data availability in paragraph (a)(6) and subparagraph (b)(4)(E). Paragraph (a)(6) defines CEMS data availability as a percentage calculated as the ratio of the total unit operating hours for which the CEMS provided quality-assured data, to the source total unit operating hours during a specified period. These hours exclude periods of calibration, maintenance, repair, or audit, up to a maximum of 40 hours per month. Subparagraph (b)(4)(E) specifies that the Executive Officer may require recertification of the CEMS if the annual availability percentage falls below 95 percent. Annual CEMS availability percentage calculations will be based on the year ending on the last day of the calendar quarter in which the CEMS was originally certified.

With regards to the period covered for the calculation, both Rule 218.1 and Rule 2012 are based on an annual period with a difference on how often the annual data availability is calculated. Rule 218.1 specifies a block annual period with the data availability calculated once every year. Rule 2012 requires a rolling annual period with the data availability calculated every day. Stakeholders commented that the rolling annual data availability could penalize the owner or operator of the CEMS beyond the data loss period.

Based on these stakeholder comments and follow-up staff analysis, it is proposed that CEMS data availability be computed for each calendar quarter. This approach aligns with the accompanying proposed requirements when the data availability falls below 95 percent for one or two consecutive quarters. In addition, this proposal addresses stakeholders' concern that low data availability of the previous calendar quarter would not affect data availability of any subsequent calendar quarter. It is also recognized that there are existing requirements by other regulatory agencies requiring various time periods (e.g., monthly or quarterly) covered for the CEMS data availability computation.[2]

[2] For example:

- ❖ Continuous Emission Monitoring System (CEMS) Code. Alberta Environmental Protection, May 1998.
- ❖ Technical Manual 1005: Guidelines for Continuous Emissions Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS). Air Quality Permitting Program Bureau of Technical Services, July 2001.

For the CEMS data availability calculation, Rule 2012 specifies the following equation:

W = Y/Z x 100%, where:

- W means the percent annual monitor availability;
- Y means the total operating hours for which the monitor provided quality-assured data during the period from the date the NOx pollutant concentration monitoring analyzer was provisionally certified or 365 days prior to the current date (not counting the current day), whichever date is later, to the day previous to the current date; and
- Z means the total operating hours of the affected piece of equipment during the period from the date the NOx pollutant concentration monitoring analyzer was provisionally certified or 365 days prior to the current date (not counting the current day), whichever date is later, to the day previous to the current date.

The concern in applying this calculation is that some RECLAIM facility owners and operators of CEMS interpret the variable "Y" as operating hours of the CEMS instead of the unit (emission source). In doing so they count in "Y" the hours when the unit does not operate but the CEMS is monitoring zero emissions. As a result, RECLAIM facilities may have calculated data availability greater than 100 percent. Some CEMS are also in the EPA Acid Rain Program and subject to 40 CFR Part 75, which provides a detailed procedure in determining CEMS data availability. In the Part 75 calculation, the parameter equivalent to "Y" is defined as total unit (emission source) operating hours for which quality-assured data were recorded. Staff agrees that this is the correct interpretation of this parameter. Consequently, the "Y" value should be the operation hours of the emission source, instead of the CEMS. With this interpretation the CEMS data availability cannot be greater than 100 percent.

On this basis, PR 218.3 paragraph (5) proposes to specify a modified equation for PR 218.3 CEMS data availability calculation. That is, the same equation (W = Y/Z x 100%) will be utilized, except that "Y" means the total unit operating hours for which the monitor provided quality-assured data during the calendar quarter.

It is also proposed to exclude certain hours from the CEMS data availability calculation. The proposed hours are (1) startup and shutdown hours that are not subject to any emission limit according to the permit condition or source specific rule; (2) CEMS maintenance, repair, or audit for up to 30 hours for each calendar quarter, and; (3) a unit Breakdown that meets all Breakdown provisions of Rule 430 and is deemed as a valid Breakdown when the emission limit is inapplicable. Rule 218.1 provides up to 40 hours per month for calibration, maintenance, repair, or audit. The proposed 30 hours for each calendar quarter is equivalent to the number of hours exempted under Rule 218.1. A daily calibration hour would be a valid maintenance hour under the proposal for the hourly emission average method.

In Rule 218.1 a CEMS recertification would be required if the annual availability percentage falls below 95 percent. A CEMS data availability threshold is a critical safeguard for CEMS performance in complying with concentration limits in a command and control regulatory structure. Although Rule 2012 does not define a data availability threshold the rule does require the penalizing Missing Data Procedures be applied to mass emission determinations. A lower CEMS data availability would entail a penalty of reporting an overestimated mass emission according to these procedures, encouraging the owner or operator of the CEMS to maintain a high CEMS data availability.

Rule 218.1 specifies a 95% data availability threshold on an annual basis. On this basis, it is proposed to maintain the 95 percent data availability threshold, on a calendar quarter basis. If CEMS data availability of any analyzer falls below this 95 percent threshold for one calendar quarter or two consecutive calendar quarters, a Relatively Accuracy Test Audit (RATA), or temporary alternative monitoring and CEMS recertification would be required. It is also proposed that the QA/QC plan would need to be revised whenever the data availability falls below 95 percent. Under PR 218.3, the CEMS data availability is determined and assessed for meeting the threshold on a calendar quarter basis, instead of a block annual or rolling annual basis under Rule 218.1 or Rule 2012. This proposed rule requirements will encourage the owner or operator of the CEMS to evaluate the system more frequently and take corrective action promptly for any CEMS deviation. Moreover, the CEMS data availability within a quarter would not be impacted by a poor CEMS performance with low data availability of any previous quarter.

CEMS Out-of-Control Period– Paragraph (i)(6)

A CEMS out-of-control period occurs when the owner or operator of the CEMS fails to meet any QA/QC test standard or fails to conduct the test as scheduled. The required QA/QC tests, including the test frequency and standards, are specified in PR 218.3 subdivision (g). The CEMS out-of-control period begins with the hour of completion of the failed test, or the hour when it becomes overdue, and ends with the hour of completion of a passing test. For a publicly owned sewage-water-landfill facility, as explained in Chapter 2 for Part 60 option under PR 218.2 (f), the CEMS out-of-control period will continue to be determined by Part 60 Appendix F if the QA/QC test fails based on a calibration error test.

CEMS data generated during the CEMS out-of-control period are not quality assured data, and thus deemed invalid data. This data cannot be utilized in any compliance demonstration or subsequent emission calculation. In addition, the hour(s) during the CEMS out-of-control period would be considered unavailable. As a result, the CEMS data availability would be adversely impacted, unless the unit is not operating or generating any emissions during the entire CEMS out-of-control period.

Alternative Data Acquisition – Paragraph (i)(7)

Various options of alternative data acquisition have been identified that can be utilized when the certified CEMS does not provide valid data. These options minimize data loss or an impact on the CEMS data availability. While Rule 218.1 does not provide no options of any alternative data acquisition options, Rule 2012 Chapter 2 (2005 amendment) and some other rules (e.g., previous revision of Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (1991 amendment)) have provided several data acquisition options. These options include:

- Load or process curves that the owner or operator of the CEMS developed and approved by the Executive Officer;
- Collecting twelve South Coast AQMD Method 7.1 samples over a 1-hour period;
- South Coast AQMD Method 100.1 -Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling; or
- A certified standby CEMS

Based on discussions with stakeholders and follow-up internal discussions, two options are proposed for alternative data acquisition during the CEMS out-of-control period, (1) the South Coast AQMD Method 100.1 and (2) a certified standby CEMS. Other options noted above were never utilized and are deemed impractical, and thus are not recommended for PR 218.2/218.3.

In addition to the proposed two options, the owner or operator of the CEMS will be provided the opportunity to recommend a different alternative data acquisition method for the Executive Officer's approval. This approval would be based on the method deemed equivalent to the South Coast AQMD certified CEMS on relative accuracy, reliability, reproducibility, and data dandling.

Data generated by the alternative data acquisition methods listed in PR 218.3 or a method approved by the Executive Officer as specified in PR 218.3, would be considered quality assured data, provided all applicable requirements are also met. They are valid data for compliance demonstration or any subsequent emission calculation. The hour(s) being covered should be considered available with regards to CEMS data availability and could be used to maintain data availability of the primary CEMS.

Automatic Calibration Data – Paragraph (i)(8)
Requirements under paragraph (i)(8) for automatic calibration data have not been changed from the existing requirements under Rule 218.1 paragraph (d)(3). If automatic adjustments to the monitor settings are made, the owner or operator shall conduct the calibration tests in a way that the magnitude of the adjustments can be determined and recorded.

F-Factors – Paragraph (i)(9)
Requirements under paragraph (i)(9) for F-Factors have not been changed from the existing requirements under Rule 218.1 paragraph (d)(4). The owner or operator of the CEMS shall use in the CEMS calculations the F-factors listed in 40 CFR Part 60, Appendix A, Method 19, Table 19-2, as applicable. Alternatively, the owner or operator of the CEMS may submit a plan for Executive Officer's approval to develop F-factors for fuels not listed in Method 19, Table 19-2.

PR 218.3 (j) - SCEMS REQUIREMENTS

Requirements for SCEMS – Paragraph (j)(1)
SCEMS is an existing provision in Rules 218 and 218.1. A SCEMS is a continuous emission monitoring system that is different from a CEMS only on response time and data acquisition frequency, that is:

- Data acquisition for SCEMS is required every 15 minutes, while it is required every minute for CEMS; and
- Response time for SCEMS must not exceed 15 minutes, while it is limited to 1.5 minutes for CEMS CO analyzers and 5 minutes for other CEMS analyzers or monitors.

Response time is defined as the time interval from a step change in the air pollutant or gas diluent concentration to the time when 95 percent of the corresponding final value is reached as displayed on the CEMS data recorder or acquisition system. The response time is determined by introducing a certified gas mixture into the CEMS upstream of the sampling interface and as close to the probe inlet as practicable. A demonstration of response time for each unit is made during certification testing.

SCEMS operating in the South Coast AQMD, not including time-shared CEMS, typically include such technologies as gas chromatography (GC) analysis for sulfur compound composition, F-Factors and higher heating value (HHV). There is no preferable CEMS technology commercially available for these types of measurements. On this basis, certification for a SCEMS would be granted pursuant to PR 218.2 clause (f)(12)(A)(i). Certification is contingent on the commercial availability of SCEMS instrumentation capable of accurately and precisely measuring the

particular air contaminant concentration or other parameters used to calculate the emission concentration.

Due to the difference in data acquisition frequency for SCEMS as compared to CEMS, a 15-minute data acquisition frequency will be utilized for an SCEMS, instead of a one-minute data acquisition frequency when calculating spiking data percentage pursuant to PR 218.3 subparagraph (i)(2)(C).

PR 218.3 paragraph (j)(1) clarifies pre-certification, certification, quality assurance and data handling requirements. This paragraph also identifies the different requirements for a SCEMS as compared to a regular CEMS.

Time-shared CEMS – Paragraph (j)(2)
Time-shared CEMS is categorized as a type of SCEMS. A time-shared CEMS is a regular CEMS in which the analyzer, and possibly the associated sample conditioning system, is used to measure emissions from more than one unit (emission source). PR 218.2 clause (f)(12)(A)(ii) provides criteria for certifying a time-shared CEMS. This requirement defines that a time-shared CEMS would be allowed when the units to be monitored by the time-shared CEMS are:

- Physically close to one another, and the proposed time-shared CEMS is approximately equidistant from all monitored units;
- Similarly sized and configured, and their gaseous emissions are of approximately the same compositions and concentrations; and
- Subject to a similar concentration limit.

Similar to an SCEMS, a time-shared CEMS would provide at least one valid data point for each monitored source per 15-minute sampling period. All performance tests would be conducted in the time-shared mode at all times. That is, the tests would need to accurately reflect the emission information associated with this CEMS monitored sources, just as if there were individually dedicated CEMS providing the same emission information.

PR 218.3 paragraph (j)(2) provides additional requirements on the measurements, with no changes from the time-sharing requirements specified in Rule 218.1 subdivision (e).

PR 218.3 (k) - MOISTURE CORRECTION
Except for a clarification, PR 218.3 subdivision (k) for moisture correction provides the same requirements as specified in Rule 218.1 subparagraph (b)(4)(F). If a moisture correction in reporting flow and concentration is required, the owner or operator of a CEMS shall measure and monitor moisture in the stack gas used for emission data calculations in accordance with the South Coast AQMD Technical Guidance Document R-001(TGD-R-001). The Executive Officer's approval is required for an alternative method.

PR 218.3 (l) - EXEMPTION
PR 218.3 subdivision (l) is identical with PR 218.2 subdivision (k) for the provision of exemption. A detailed discussion is provided under the discussion for PR 218.2 subdivision (k).

CHAPTER 4: PROPOSED AMENDED RULES 218

PROPOSED AMENDED RULE REQUIREMENTS

PAR 218

Non-RECLAIM CEMS will transition to PR 218.2 and 218.3 according to the implementation schedule specified under PR 218.2 and 218.3 subdivision (d). Prior to the transition, non-RECLAIM CEMS will continue to be subject to Rules 218 and 218.1. It is proposed to incorporate a phase out provision paragraph (b)(3) under Rule 218 as follows:

(3) *The owner or operator of any CEMS subject to Rules 218 and 218.1 shall continue to comply with the requirements specified in these rules until the date specified in Rule 218.2 (d)(2) or Rule 218.3 (d)(2).*

CHAPTER 5: IMPACT ASSESSMENT

INTRODUCTION

PR 218.2 and 218.3, and PAR 218 are applicable to owners or operators of CEMS for units operated within about 80 RECLAIM facilities and 120 non-RECLAIM facilities. Those units include refinery FCCU, refinery tail gas unit, kiln or calciner, industrial boilers and heaters, internal combustion engine, gas turbines, furnace, oven, dryer, heater, incinerator, and any solid, liquid or gaseous fueled equipment required by source-specific rules for continuous emission monitoring.

EMISSION REDUCTIONS

PR 218.2 and 218.3, and PAR 218 are administrative rules and provide technical guidelines for installation and operation of CEMS required by the South Coast AQMD rules or permit conditions. PR 218.2, 218.3, and PAR 218 do not directly regulate sources for emissions control, therefore there is not emission reductions entailed by this rule development.

COST-EFFECTIVENESS

While a source-specific rule determines when a CEMS would be required to for emission monitoring, PR 218.2 and 218.3, and PAR 218 provide administrative and technical guidelines for how to properly operate the CEMS. The cost-effectiveness of operating any CEMS is included in the related source-specific rule development.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062. If the project is approved, the Notice of Exemption will be electronically filed with the State Clearinghouse to be posted on their CEQAnet Web Portal, which may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent. In addition, the Notice of Exemption will be electronically posted on the South Coast AQMD's webpage which can be accessed via the following weblink: http://www.aqmd.gov/nav/about/public-notices/ceqa-notices/notices-of-exemption/noe---year-2021. The electronic filing and posting of the Notice of Exemption is being implemented in accordance with Governor Newsom's Executive Orders N-54-20 and N-80-20 issued on April 22, 2020 and September 23, 2020, respectively, for the State of Emergency in California as a result of the threat of COVID-19.

SOCIOECONOMIC IMPACT ASSESSMENT

California Health & Safety Code §40440.8 requires a socioeconomic impact assessment for proposed and amended rules resulting in significant impacts to air quality or emission limitations. This assessment shall include affected industries, range of probable costs, cost effectiveness of control alternatives, and emission reduction potential. The Proposed Rule 218 Series (amendments and new rules) which included Proposed Amended Rule 218 (PAR 218) - Continuous Emission Monitoring, Proposed Rule 218.2 (PR 218.2) - Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 (PR 218.3) - Continuous Emission Monitoring System: Performance Specification (here in Rule 218 Series) do not impact air quality or emission limitations. As such, a socioeconomic assessment is not statutorily required here. Nevertheless, the staff has prepared a brief potential cost and regional economic impacts assessment for Rule 218 Series.

Under the proposed rules and amendments, the affected facilities would be required to purchase data acquisition and handling systems (DAHS) software that controls the CEMS equipment.

Affected Facilities and Industries

For the purpose of the cost impact analysis, staff used the audited data from a 2017 RECLAIM audit and the South Coast AQMD's database of permit applications to determine the universe of active and existing CEMS. The universe of affected facilities comprised of a wide range of industries with a large variability in the number of devices per facility. The universe of the affected facilities includes 47 different North American Industry Classification System (NAICS) codes as shown in Table 5-1 below.

Table 5-1: Number of Affected CEMS Devices by Industry

2-, 3-, or 4-Digit NAICS Codes	Industry Description	# of CEMS Devices
324	Petroleum and coal products manufacturing	274
2211	Electric power generation, transmission, and distribution	164
92	State and local government	40
2213	Water, sewage, and other systems	38
562	Waste management and remediation services	25
61	Educational services; private	20
42	Wholesale trade	18
486	Pipeline transportation	17
5614, 5616, 5619	Business support services; Investigation and security services; Other support services	16
622	Hospitals; private	13
3314	Nonferrous metal (except aluminum) production and processing	13
3121	Beverage manufacturing	12
211	Oil and gas extraction	11
3251	Basic chemical manufacturing	11
3221	Pulp, paper, and paperboard mills	8
5416	Management, scientific, and technical consulting services	8
487, 488	Scenic and sightseeing transportation and support activities for transportation	8
213	Support activities for mining	6
3115	Dairy product manufacturing	4
3254	Pharmaceutical and medicine manufacturing	4
3273	Cement and concrete product manufacturing	4
3329	Other fabricated metal product manufacturing	4
2212	Natural gas distribution	3
3274, 3279	Lime, gypsum and other nonmetallic mineral product manufacturing	3
6214, 6215, 6219	Outpatient, laboratory, and other ambulatory care services	3
7111, 7113, 7114	Performing arts companies; Promoters of events, and agents and managers	3
3116	Animal slaughtering and processing	2
3259	Other chemical product and preparation manufacturing	2
3272	Glass and glass product manufacturing	2

3311	Iron and steel mills and ferroalloy manufacturing	2
44-45	Retail trade	2
523, 525	Securities, commodity contracts, fund, trusts, and other financial investments and vehicles and related activities	2
8131-8133	Religious organizations; Grantmaking and giving services, and social advocacy organizations	2
492	Couriers and messengers	1
531	Real estate	1
721	Accommodation	1
3111	Animal food manufacturing	1
3114	Fruit and vegetable preserving and specialty food manufacturing	1
3119	Other food manufacturing	1
3222	Converted paper product manufacturing	1
3315	Foundries	1
3363	Motor vehicle parts manufacturing	1
5415	Computer systems design and related services	1
5611, 5612	Office administrative services; Facilities support services	1
8134, 8139	Civic, social, professional, and similar organizations	1
Total		**756**

As presented in the Table 5-1, a total of 756 CEMS are potentially affected by the Rule 218 Series. The 2017 audit dataset found 500 CEMS devices in the RECLAIM universe. In addition, 256 non-RECLAIM CEMS devices were identified from South Coast AQMD's database of permit applications, but this dataset may over-represent the active devices because equipment may not have been installed or may not be currently in use. The petroleum refineries industry (NAICS 324110) has the highest number of devices by industry with an estimated 274 active CEMS devices across 10 refinery facilities. In the petroleum refineries category, the average number of CEMS devices per facility exceeds 25, and the maximum for one refinery was 47 devices. The distribution of devices and facilities by county is provided in Table 5-2 below.

Table 5-2: Distribution of Rule 218 Series Potentially Affected Devices and Facilities, by County

County	# of CEMS Devices	# of Facilities
Los Angeles	569	131
Orange	62	21
Riverside	59	23
San Bernardino	66	30
Total	**756**	**205**

Small Businesses

South Coast AQMD defines a "small business" in Rule 102 as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. South Coast AQMD also

defines “small business” for the purpose of qualifying for access to services from the South Coast AQMD’s Small Business Assistance Office as a business with an annual receipt of $5 million or less, or with 100 or fewer employees.

U.S. Small Business Administration (SBA) definitions of small businesses vary by six-digit NAICS code, as shown in Table 3.[3] Staff has identified 47 different industries impacts by the Rule 218 Series and applied the criteria to determine which of the affected facilities meet the SBA criteria for small business.

In addition to South Coast AQMD’s and SBA's definitions of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 also provides a definition of a small business. The CAAA classifies a business as a "small business stationary source" if it: (1) employs 100 or fewer employees, (2) emits less than 10 tons per year of any single pollutant and less than 20 tons per year of all pollutants, and (3) is a small business as defined under the federal Small Business Act (15 U.S.C. Sec. 631, et seq.).

Revenue and employee data from the Dun and Bradstreet Enterprise Database was available for most of the Rule 218 Series potentially affected facilities. The number of facilities potentially affected by the Rule 218 Series that are classified as small businesses and classification definition are listed in Table 5-3 below:

Table 5-3: Rule 218 Series Potentially Affected Facilities Small Business Tabulation

Small Business Definition	# Small Businesses
South Coast AQMD (Rule 102)	57 out of 205
South Coast AQMD (Small Business Assistance Office)	118 out of 205
U.S. Small Business Administration (SBA)	129 out of 205
1990 Clean Air Act Amendments (CAAA)	118 out of 205

Compliance Costs

According to one refinery representative, the maximum one-time cost of DAHS software upgrade is estimated at $1 million per refinery, which is approximately $21,276 per software upgrade, per device. Staff then used this per unit upgrade cost to estimate the total one-time cost of the other nine petroleum refineries. In total, one-time cost of DAHS software upgrade for 252 devices for the 10 affected refineries is estimated at $5.36 million.[4]

Staff also estimated the DAHS software upgrade costs for non-refinery facilities, which generally have a smaller number of devices per facility. According to several vendors of CEMS equipment

[3] The latest SBA definition of small businesses by industry can be found at the following website: http://www.sba.gov/content/table-small-business-size-standards.

[4] 22 non-RECLAIM CEMS devices at petroleum refineries are not counted in this figure.

and software, the cost of a DAHS software upgrade can range between $30,000 and $100,000 per device. Staff used an average figure of $65,000 per device for the cost estimate of non-refinery devices. The total one-time cost for DAHS upgrades for the 504 non-refinery CEMS is estimated at $32.76 million. The DAHS software upgrades are expected to last a minimum of 25 years (the expected life of CEMS equipment), and periodic software updates are assumed to have no additional cost.

The total one-time cost of the Rule 218 series proposed amendments and new rules is estimated at $38.1 million (present worth). The annualized cost of the proposed rules and amendments in the 218 Series are expected to be from $1.5 to $2.2 million annually between 2024 and 2049, respectively.

Table 5-4: Rule 218 Series Total and Annualized Costs, Refinery and Non-Refinery

Industry description	Average Annual Costs (2024-2049)	
	1% Discount Rate	4% Discount Rate
Petroleum Refineries	$260,000	$373,000
Non-Refinery	$1,239,000	$1,779,000
Total	**$1,498,000**	**$2,152,000**

Regional Macroeconomic Impacts

The REMI model (PI+ v2.4.1) was used to assess the total socioeconomic impacts of the regulatory change from the Rule 218 Series.[5] The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and for each county, it is comprised of five interrelated blocks: (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares.[6]

The assessment herein is performed relative to a baseline ("business as usual") where the Rule 218 Series would not be adopted. The baseline of this model has been calibrated with the latest data, made available in August 2020, which reflects the recent regional impacts on the local economy as a result of COVID-19. Adoption of the Rule 218 Series would create a regulatory scenario under which the potentially affected facilities would incur average annual compliance costs totaling $1.5 to $2.2 million for low- and high-rate scenarios respectively. Direct effects of proposed

[5] Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (160-sector model). Version 2.4.1, 2020.

[6] Within each county, producers are made up of 156 private non-farm industries and sectors, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. (For details, please refer to REMI online documentation at http://www.remi.com/products/pi.)

rules/amendments must be estimated and used as inputs into the REMI PI+ model in order for the model to assess secondary and induced impacts for all sectors in the four-county economy on an annual basis and across a user-defined horizon (2024 - 2049). Direct effects of the Rule 218 Series include additional costs to the potentially affected facilities and additional sales by local vendors of equipment, devices, or services supplying the necessary goods/services to help the potentially affected facilities meet the proposed requirements of Rule 218.

The proposed rules and amendments of the 218 Series are expected to result in 44 to 68 jobs foregone on average, annually, between 2024 and 2049. The compliance costs that are incurred in 2024 are one-time costs that were annualized over 25 years for the expected life of the CEMS equipment. The jobs foregone represent less than 0.001% of the regional baseline jobs, and the impact on competitiveness (such as relative delivered price and relative cost of production) are expected to be minimal. The majority of the jobs foregone are in the sectors of manufacturing (NAICS 31-33), construction (NAICS 23), and retail trade (NAICS 44-45).

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

California Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with section 40727, 40727.2 requires a written analysis comparing the proposed amended rule with existing regulations, if the rule meets certain requirements. The following provides the draft findings.

Necessity: A need exists to propose Rules 218.2 and 218.3 and amend Rule 218 to provide administrative and technical specifications to continuous emission monitoring systems.

Authority: The South Coast AQMD obtains its authority to adopt, amend, or repeal rules and regulations from California Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, 41508, and 41700.

Clarity: PR 218.2 and 218.3, and PAR 218 have been written or displayed so that their meaning can be easily understood by the persons affected by the rule.

Consistency: PR 218.2 and 218.3, and PAR 218 are in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or federal regulations.

Non-Duplication: PR 218.2 and 218.3, and PAR 218 do not impose the same requirement as any existing state or federal regulation and is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference: In amending this rule, the South Coast AQMD hereby implements, interprets, or makes specific reference to the following statues: Health and Safety Code sections 39002, 40001, 40702, 40440(a), and 40725 through 40728.5.

INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code section 40920.6 requires an incremental cost-effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option that would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors. PR 218.2 and 218.3, and PAR 218 are not Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies; therefore, this provision is not applicable.

COMPARATIVE ANALYSIS

Health & Safety Code section 40727.2(g) for comparative analysis is applicable when the proposed amended rules or regulations impose, or have the potential to impose, a new emissions limit or standard, or increased monitoring, recordkeeping, or reporting requirements. In this case, a comparative analysis is not required because the amendments do not themselves impose such requirements but are only triggered by other source-specific rules that would impose these requirements.

CHAPTER 6: APPENDICES

APPENDIX A: AN OVERVIEW COMPARING RULE 218 AND PROPOSED RULE 218.2 REQUIREMENTS

Requirements	Rule 218	PR 218.2	Changes under PR 218.2 as compared with Rule 218
Purpose	None	(a)	Same purpose as for Rule 218, although it is not specified in Rule 218
Applicability	(b)	(b)	PR 218.2 retains the concept of the applicability under Rule 218 and provides further clarification
Definitions	(a)	(c)	The following new definitions added to PR 218.2: • ACEMS • CALIBRATION ERROR TEST • CEMS FAILURE • CEMS FINAL CERTIFICATION LETTER • CEMS MODIFICATION • RECLAIM • RECLAIM FACILITY • FORMER RECLAIM FACILITY • UNIT Other changes: • Removed a list of existing definitions that are no longer used in Rule 218.2 or have been integrated in the rule language • Revised a list of existing definitions for clarity
Implementation schedule	None	(d)	This new subdivision in PR 218.2 defines the timeline to transition facilities from complying with Rules 218 and 218.1 or Rule 2012 to PR 218.2 and 218.3
Monitoring Requirements			
Continuous measurement	None	(e)(1)	Same concept as Rule 218, although it is not clearly specified in Rule 218
CEMS failure (for up to 96 hours)	(f)(3)(B)	(e)(2)	Revision • Allowing an additional 96 hours if the emission source is not operating • No longer requiring an interim variance for the additional hours
CEMS shutdown at a unit long term shutdown	None	(e)(3)	New provisions

Requirements	Rule 218	PR 218.2	Changes under PR 218.2 as compared with Rule 218
			• Conditionally allowing CEMS shutdown at a unit shutdown that lasts for a minimum 168 consecutive hours
Demonstrating unit non-operation	None	(e)(4)	New provisions • Options to demonstrate unit non-operation • Referenced by (e)(2) and (e)(3)
Certification Requirements			
Application and approval requirements	(c)(1)(A)	(f)(1) (f)(2) (f)(3) (f)(4) (f)(5) (f)(6) (f)(7)	• No change in concept with Rule 218 application process - (f)(2) • Provided an application process for CEMS modification required within 30 days due to CEMS failure – (f)(3) • Reorganized the rule language for clarity ✓ Establishing the "roadmap" - (f)(2) and (f)(3) ✓ Providing details - (f)(4) through (f)(7)
Alternative process for modification of CEMS Component Listed in Guidance Document R-002	None	(f)(8)	• Alternative process for a CEMS modification on a component that is: ✓ Not identified on the CEMS final certification letter ✓ Listed on the South Coast AQMD Technical Guidance Document R-002 • Incorporated current practices into the rule
If an alternative CEMS recertification submitted pursuant to subparagraph PR218.2 (f)(7) is disapproved	None	(f)(9)	
Alternative process for modification of CEMS Component Listed in Quality Assurance/Quality Control Plan	None	(f)(10)	• Alternative process for a CEMS modification on a component that is: ✓ Not identified on the CEMS final certification letter ✓ Not listed in the South Coast AQMD Technical Guidance Document R-002 ✓ Listed in the Quality Assurance/Quality Control Plan • Incorporated current practices into the rule
Emission Data During CEMS	None	(f)(11)	New provision

Requirements	Rule 218	PR 218.2	Changes under PR 218.2 as compared with Rule 218
Certification or Recertification			• Provisionally validating the data recorded during the certification or recertification process
Operation of CEMS During Certification Testing	(c)(3)	(f)(12)	No change
SCEMS and ACEMS Certification and Recertification	(c)(2)	(f)(13)	• Clarified the criteria for certifying a SCEMS • Added the criteria for certifying a time-shared CEMS (a type of SCEMS) and an ACEMS • Moved the specification for different data acquisition and averaging interval to PR 218.3 (j)
Requirements for Existing CEMS and SCEMS			
Requirements for existing CEMS and SCEMS	(d)	None	Deleted provisions • Under Rule 218, a CEMS or SCEMS is considered as an existing CEMS or SCEMS if its certification application for initial approval was submitted before May 14, 1999, otherwise it is a new CEMS or SCEMS • PR 218.2 does not differentiate between "new" or "existing" CEMS (or SCEMS) by application date for the requirements
Quality Assurance/Quality Control (QA/QC) Plan			
What to include for a QA/QC plan	(a)(12)	(g)(1)	• No change to the approach • Rule language revised for clarity • Added the reference "Guidelines for Continuous Emission Monitoring System Quality Assurance and Quality Control Plan"
Submittal timeline for a new QA/QC plan	(c)(4)(A)	(g)(2)	No change
Submittal timeline for a revised QA/QC plan	None	(g)(3)	New provision • Submit required revision for approval within 30 days
Alternative quality assurance practices	(c)(4)(B)	(g)(4)	No change

Requirements	Rule 218	PR 218.2	Changes under PR 218.2 as compared with Rule 218
Recordkeeping Requirements			
Records for CEMS data measured and calculated	(e)(2)	(h)(1)	• No change to the approach • Rule language revised for clarity
Records for the specified files	(e)(2)	(h)(2)	
The approach to maintain the records	(e)(1)	(h)(3)	
Reporting Requirements			
Semi-annual emission summary	(f)(1)	(i)(1)	• No change to the approach • Rule language revised for clarity ✓ Reorganized the rule structure for clarification ✓ Specified the reporting period ✓ Moved the rule language related to recordkeeping to PR 218.2 subdivision (h)
Excess emission	(f)(2)	(i)(2)	• No change to the approach • Minor word changes for clarity
CEMS non-operation due to maintenance or damage	(f)(3)	(i)(3)	• No change to the approach • Added specification for the required information for the report
Scheduled CEMS shutdown	None	(i)(4)	New provision • Contingent on PR 218.2 (e)(3) which allows a CEMS shutdown during a scheduled unit shutdown that lasts for a minimum 168 consecutive hours • Requires the owner or operator of the CEMS to notify the Executive Officer and submit a written report for the incident
Relative Accuracy Test Audit (RATA)	None	(i)(5)	New provision • Requires submitting the RATA report within 60 days upon completion of the test • Aligns with Rule 2012 requirement
Posting CEMS Certification			
Posting of written approval of CEMS certification	(g)	(j)	No change

Requirements	**Rule 218**	**PR 218.2**	**Changes under PR 218.2 as compared with Rule 218**
Exemption	None	(k)	Implemented in practice

APPENDIX B: AN OVERVIEW COMPARING RULE 218.1 AND PROPOSED RULE 218.3 REQUIREMENTS

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
Purpose	None	(a)	• Same purpose as for Rule 218.1, although it is not specified in Rule 218.1
Applicability	None	(b)	• The applicability provision in Rule 218 is intended to cover Rule 218.1 • PR 218.3 retains the concept of the applicability under Rule 218 and provides further clarification
Definitions	(a)	(c)	The following new definitions added to PR 218.3: • ACEMS • CEMS MODIFICATION • FORMER RECLAIM FACILITY • LOWEST VENDOR GUARANTEED SPAN RANGE • MAINTENANCE • RECLAIM • RECLAIM FACILITY • SPAN RANGE • UPPER SPAN VALUE • UNIT Other changes: • Removed a list of existing definitions that are no longer used in Rule 218.3 or have been integrated in the rule language • Revised a list of existing definitions for clarity (equations from certain definitions are incorporated in Table 3)
Implementation schedule	None	(d)	This new subdivision in PR 218.3 defines the timeline to transition facilities from complying with Rules 218 and 218.1 or Rule 2012 to PR 218.2 and 218.3
Pre-certification requirements			
CEMS location	(b)(1)(A)	(e)(1)	Minor change on wording
Sampling location	(b)(1)(B)	(e)(2)	Restructured the rule language

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
Span Range	(b)(1)(C)	(e)(3)	New provisions • Approving a span range if (e)(3)(A) and (e)(3)(B) cannot be concurrently satisfied - (e)(3)(C) • Approving a span range with the upper span value at up to 10 ppm for a unit with emission limit less than 5 ppm - (e)(3)(D) • Exempting the top span range of multiple span range analyzer - (e)(3)(E)
Data Acquisition and Handling System (DAHS)	(b)(1)(E)	(e)(4)	New provisions • Recording all status code specified in Table 2 - (e)(4)(E) • Incorporating all applicable data handling requirements specified in subdivision (i) - (e)(4)(G)
Operational Period	(b)(1)(F)	(e)(5)	Minor change on wording
Certification requirements			
Seven-day calibration drift testing	(b)(2)(A)	(f)(1)	Clarification provided • Specified that calibration testing is performed for each span range for the same seven-day testing period • Added 2-hour grace period for each test • Specified calibration error test for stack flow monitors • Referenced calculation equation in Table 3
Analyzer enclosure	(b)(2)(B)	(f)(2)	Minor structure changes and revisions • Specified when corrective actions should be made
Relative accuracy test audit (RATA)	(b)(2)(C)	(f)(3)	New provisions • Specified the guidance document to determine an outlier - (f)(3)(B): • Added the reference to calculation equation (no change to the equation) - (f)(3)(C) • Provided equations to clarify how to calculate a de minimis value - (f)(3)(D) Revision • Standards for RA and *De Minimis* of a RATA - (f)(4)(E): ✓ Reduced NOx *de minimis* from 1.0 ppm to 0.5 ppm

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
			✓ Provided a standard for units with CO emission limit < 2.0 ppm ✓ Added *de minimis* 1.0% for CO2 (only for O2 previously) ✓ Allowed 20.0% for O2/CO2 when its measured value is low
Other checks required along with RATA	(b)(3)	(f)(4)	New provisions • Re-structured the rule language with no requirement changes: ✓ Response time (f)(4)(A) ✓ Cyclonic flow (f)(4)(E) ✓ Linearity error (f)(4)(F) • Added: ✓ NOx converter efficiency (f)(4)(B) ✓ Sampling system bias check (f)(4)(C) (Both tests are conducted in practice and included in certification guidance document) • Relocated technical details to Attachment B for: ✓ Concentration stratification (f)(4)(D) • Removed ✓ Interference check 218.1 (b)(3)(A) (Not conducted in practice) ✓ Calibration error 218.1 (b)(3)(B) (Already required for 7-day drift and ongoing QAQC)
Alternative Emission Monitoring System (ACEMS)	None	(f)(5)	This is a new provision • Not specified in Rules 218 and 218.1 • Referencing the ACEMS specification under Rule 2012
Laboratory approval program	Part of 218 (c)(1)(A)	(f)(6)	No change
Quality Assurance Testing Requirements			
Calibration Error	(b)(4)(A)	(g)(1)	Revision • Revised previous language for test frequency in Rule 218.1 (b)(2)(A) “as close to 24-hour intervals as practicable” to “for every 24 hours with a 2-hour grace period” - (g)(1)(A)(i) New provisions

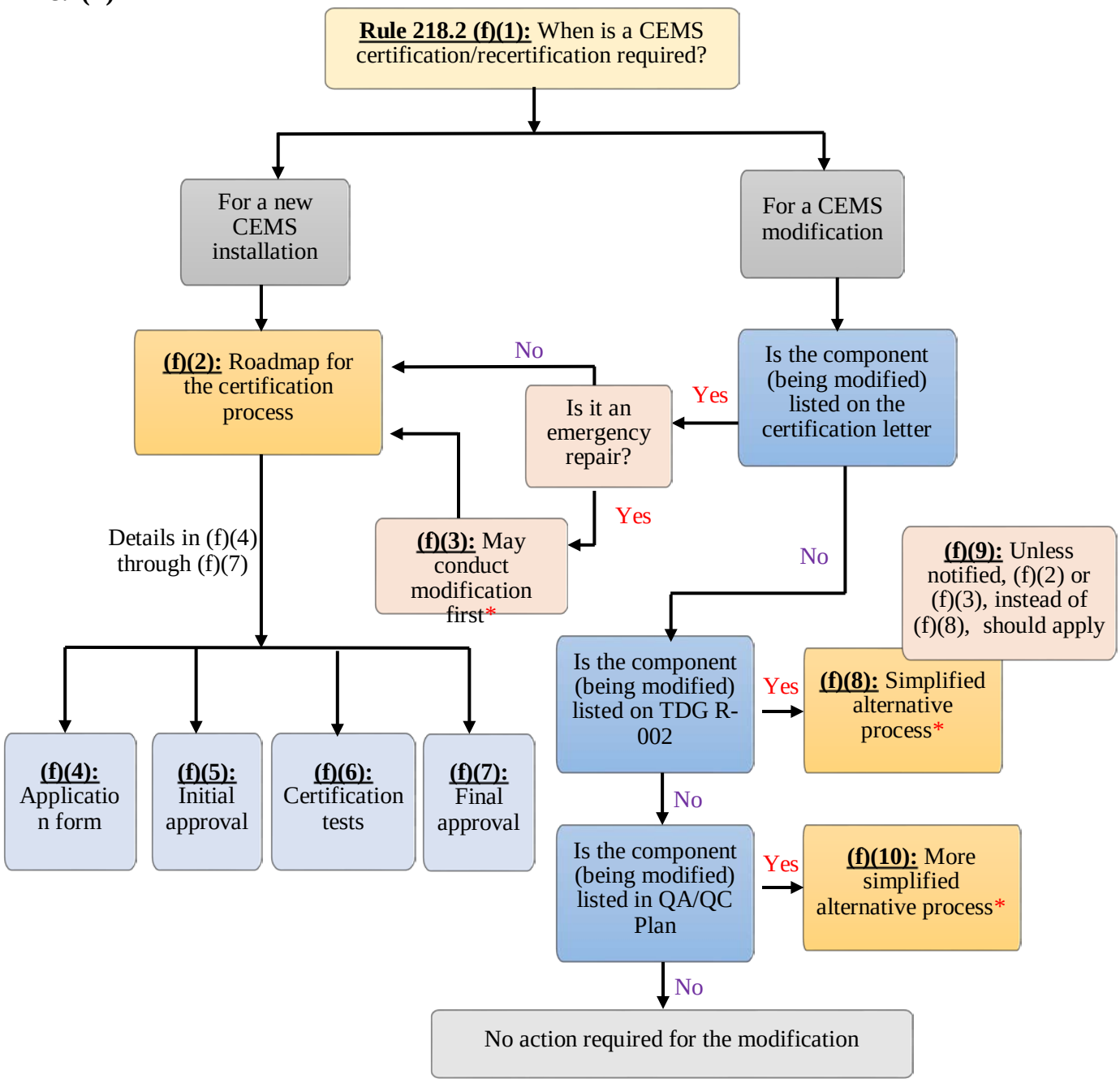
Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
			• Specification for stack flow monitor test requirements is based on Rule 2012 for RECLAIM CEMS - (g)(1)(A)(ii) • 4-hour grace period for unit restart after one or more unit non-operation days - (g)(1)(B) • CEMS data validation – (g)(1)(E) &(F)
Relative Accuracy Testing Audit (RATA)	(b)(4)(C)	(g)(2)	Revision • Revised previous language for test frequency in Rule 218.1 "once every 12 months, no later than the end of the calendar quarter in which the date of the original certification test was performed" to "within 12 months of the end of the month of the previous relative accuracy test" - (g)(2)(A) New provisions • Specification for stack flow monitor test requirements are based on Rule 2012 for RECLAIM CEMS - (g)(2)(D) • RATA at a unit restart (aligning with Rule 2012) – (g)(2)(D) • Paragraphs PR 218.3 (g)(2)(B) & (C) are referencing (f)(3) and (f)(4) for specifications where new provisions are included
Cylinder Gas Audit (CGA)	(b)(4)(D)	(g)(3)	New provisions • Allowing linearity error check to substitute cylinder gas audit • Exempting the test for a quarter with minimal operation
Daily check and periodic calibration for ACEMS	None	(g)(4)	This is a new provision • Not specified in Rules 218 and 218.1 or Rule 2012 • Addressed in the ACEMS QAQC plan and conducted in practice
Other checks for stack flow monitor	None	(g)(5)	This is a new provision • Not specified in Rules 218 and 218.1 • Based on the existing requirements in Rule 2012 for RECLAIM CEMS stack flow monitor
Maintenance for fuel flow meter (utilized for determining	None	(g)(6)	This is a new provision • Not specified in Rules 218 and 218.1 or Rule 2012 • Currently addressed in the CEMS QAQC plan and implemented in practice

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
stack flow with F factor)			
Calibration Gas and Zero Gas			
Calibration Gas	(d)(1)	(h)(1)	New provisions • Additional certification programs for calibration gas – (h)(1)(B) through (E) • Additional alternative options - (h)(1)(F)(i) & (ii)
Zero Gas	(d)(2)	(h)(2)	No change
Data handling			
Data points below 10 percent of the upper span value	(b)(1)(C)(v)	(i)(1)	No change
Data point above 95% of the upper span value	(b)(1)(C)(vi)	(i)(2)	New provisions • Spiking data recording (at 95% of the upper span value vs. being discarded as invalid data according to Rule 218.1 and Rule 2012) -(i)(2)(A) & (i)(2)(B)(ii) • The quarterly spiking data percentage calculation - (i)(2)(C) • Threshold for the quarterly spiking data percentage and subsequent requirement – (i)(2)(D) • Data validity for measurements below 10 percent or above 95 percent of the upper span value
Validity for (i)(1) and (i)(2) data	None	(i)(3)	New provision • Data validity for measurements below 10 percent or above 95 percent of the upper span value
Emission data averaging	None	(i)(4)	New provisions • Hourly average calculation for full and partial unit operating hours and during maintenance and quality assurance activities – (i)(4)(A) • Emissions averaging for a 15-minute interval – (i)(4)(B) • Emission averaging for intervals greater than one-hour – (i)(4)(C) • Pollutant concentration correction by diluent gas – (i)(4)(D)

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
			• Comparable data average requirements by landing rules or permits superseding requirements under this paragraph – (i)(4)(E)
CEMS data availability	(b)(4)(E)	(i)(5)	New provisions • Quarterly data availability calculation equation – (i)(5)(A) • Operating hours to exclude for the calculation – (i)(5)(B) • Data availability threshold and subsequent requirements – (i)(5)(C)
CEMS out-of-control period and alternative data acquisition	Part of (b)(4)(A)	(i)(6) & (i)(7)	New provisions • What is CEMS out-of-control period (not specified in Rules 218 and 218.1, but specified in Rule 2012) – (i)(6)(A) • Data generated during the CEMS Out-of-Control period – (i)(6)(B) • Data availability calculation during the CEMS Out-of-Control period – (i)(6)(C) • Options for alternative data acquisition for any period when the certified CEMS does not provide valid data – (i)(7) ✓ Existing options under Rule 2012 : South Coast AQMD Method 100.1 - (i)(7)(A) and A certified standby CEMS - (i)(7)(B) ✓ New option: Alternative data acquisition method upon Executive Officer approval -(i)(7)(C)
SCEMS Requirements			
SCEMS	(a)(16) & (b)(1)(E)	(j)(1)	PR 218.3 (j)(1) has combined the existing rule language and the actual implementation
Time-shared CEMS	(e)	(j)(2)	New provisions • Added (j)(2)(F) and (j)(2)(H) for clarification
Moisture Correction	(b)(4)(F)	(k)	No change to requirements with only clarifications • Minor rule structural change • Specified the South Coast AQMD guidance document
Exemption	None	(l)	Implemented in practice

Requirements	Rule 218.1	PR 218.3	Changes under PR 218.3 as compared with Rule 218.1
Tables and Attachments			
Table 1:Reference Methods	Table 1	Table 1	No change
Table 2: DAHS Status Codes	None	Table 2	New table • Referenced by 218.3 (e)(4)(E)
Table 3: Equations	None	Table 3	New table • Previously included under various definitions in Rule 218.1
Table 4: t-Values	None	Table 4	New table • Included under definition (a)(9) in Rule 218.1
Attachment A: Supplemental and alternative CEMS performance requirements	Attachment A	Attachment A	No change
Attachment B: Concentration stratification and CEMS probe location	None	Attachment B	New attachment • Included under rule 218.1 (b)(3)(C) • Referenced by PR 218.3 (f)(4)(D)

APPENDIX C: FLOW CHART FOR RULE CEMS CERTIFICATION PROCESS UNDER 218.2(F)



- ✓ * Rule 218.2 (f)(3), (f)(8), and (f)(10) allow CEMS modification to be conducted prior to any interim approval
- ✓ Rule 218.2 (f)(11), (f)(12), and (f)(13) are addressing the other aspects of certification
  - o (f)(11): Data validity during the interim time prior to final approval
  - o (f)(12): CEMS operation requirement during certification tests
  - o (f)(13): The option and criteria of certifying a SCEMS or ACEMS, vs. a regular CEMS

APPENDIX D: RESPONSE TO PUBLIC COMMENTS

South Coast AQMD staff held a public workshop on January 6, 2021 via Zoom video conference. Comments were received during the public workshop, and five comment letters were received during the comment period. Based on stakeholder comments, the comment period was extended from January 20 to January 22, 2021.

The following responses summarize the key comments received during the public workshop:

Comment WS-1: The stakeholders need more time to review the proposed rules.

Response WS-1: Rule development has been a long, extensive, detail-oriented, and transparent process starting in 2018 with the first working group meeting in March 2019 and extending over 10 more meeting evaluating over 20 specific key topics in both proposed rules. Discussion with stakeholders have been ongoing in both meeting and comment letter format. There have been updated versions of the rule in response to stakeholder comments since the first version was released in June 2020. In addition, in order to assist stakeholders in understanding the impact to them from any new requirements, comparative tables were provided in November 2020. However, the public process is not over and staff is committed to continue to meet with stakeholders to clarify and explain the rule language.

Comment WS-2: There is a need to be definitive on the date of "exiting RECLAIM" for determining the implementation date for RECLAIM CEMS.

Response WS-2: PR 218.2 (d)(3) and PR 218.3 (d)(3) specify "exiting RECLAIM" as the point in time in which the NOx RECLAIM facility has been notified via a formal letter by the Executive Officer as a former RECLAIM facility.

Comment WS-3: The CEMS shutdown should also be allowed during a long-term unit shutdown that is not scheduled.

Response WS-3: Staff agrees with the commenter and PR 218.2 (e)(3) has been revised to allow CEMS shutdown during a long-term unit shutdown no matter if the unit shutdown is scheduled or unscheduled.

Comment WS-4: For a unit that is not in operation but its pilot light is on, would the provisions in PR 218.2(e) allowing CEMS shutdown be applicable?

Response WS-4: The provisions in PR 218.2 (e) allow CEMS shutdown provided that the owner or operator of the CEMS demonstrate that the unit is not operating and no emissions are generated. When the pilot light is on, fuel is being consumed and emissions are generated. Therefore, the provisions in PR 218.2(e) allowing CEMS shutdown would not be applicable. A compliance advisory issued to RECLAIM facilities on March 15, 2012 also emphasizes that emissions from pilot lights should not be omitted from CEMS measurements. If the monitored value is determined to be negligible due to a pilot light operation only through the Executive officer's evaluation on a

case by case basis, the Executive Office may note it on the certification letter.

Comment WS-5: For reporting CEMS failure under PR 218.2 (i)(3), staff should retain the wording in Rule 218, which is "notifying" (instead of "reporting" to) the Executive Officer with the required information, so that the requirement could be met with a phone notification.

Response WS-5: Staff has revised PR 218.2 (i)(3) and PR 218.2 (e)(2)(B) to incorporate the request for notifying the Executive Officer with the required information.

Comment WS-6: For the modification of CEMS components listed in QA/QC plan, a list of components that are subject to the alternative recertification process should be included in the rule.

Response WS-6: CEMS components identified in its QA/QC plan are, or can be, unique to each system and could have a potential impact on the CEMS performance. The current procedure is that staff works with the owner or operator on their list of CEMS components to be included in the QA/QC plan, upon which any future changes to that list could warrant a need for recertification. In order to streamline or codify existing practices, the proposed rules include alternative recertification process but it would be too speculative to determine in advance which component could be the cause for recertification. In addition, providing a specific list could have the opposite effect, which would be to over-prescribe the need for the recertification. Maintaining the existing case by case evaluation allows for flexibility to both staff and the CEMS owner who will be made aware of those potentially impacted components. In other words, during the Executive Officer's review for approval of the QA/QC plan, staff will be able to determine which, or any, components that will be exempted from the alternative recertification process for a future modification.

Comment WS-7: Staff should revise the data handling requirements to minimize emission over-estimation for an analyzer with distinctive multiple span ranges.

Response WS-7: Staff respectfully does not recommend changes to the proposed data handling requirements for CEMS with multiple span ranges for the following reasons. An analyzer with distinctive multiple span ranges typically have no more than two span ranges. The higher span range may have an upper span value up to 10 times of that of the lower span range. The concern is the large monitoring gap between 95 percent of the upper span value of the lower span range and 10 percent of the upper span value of the higher span range. Any data falling in this monitoring gap would be reported as the upper end value which is 10 percent of the upper span value of the higher span range. On this basis, the reported data would be overestimated. There would be no adverse impact in demonstrating compliance with a

concentration limit as the span ranges are certified to measure that limit. The impact would be when there is a need for a mass emission calculation (e.g., for excess emission determination) and a more accurate determination is desired. In this situation, staff recommends adding another span range to fill in the monitoring gap.

Comment WS-8: Staff should include special considerations on analyzer span range setting for rich burn engines. Selection of the analyzer range including the oxygen analyzer is challenging.

Response WS-8: For a rich burn engine with low oxygen (O_2) concentration in the exhaust, carbon dioxygen (CO_2) would be suggested as an alternative diluent gas for pollution collection. Further concerns on pollutant correction or emission fluctuation that pose challenges in meeting a source-specific rule required emission limit will be addressed in the source-specific rule. If an oxygen analyzer is selected as the diluent gas, PR 218.3 (e)(3)(F) allows a special span range to be assessed and approved by the Executive Officer. An oxygen analyzer measuring low level oxygen in the exhaust may take advantage of the de minimis standard (1.0%) to pass a relative accuracy test audit.

Comment WS-9: With regards to the proposed grace period for required testing at unit restart, staff should take into consideration that a unit restart may take several attempts. The proposed rule should define which attempt marks the unit restart.

Response WS-9: PR 218.3 (g)(1)(B) and PR 218.3 (g)(2)(D) have been revised to specify that the unit restart that establishes normal operation marks the unit restart.

Comment WS-10: The hours for conducting a spiking Relative Accuracy Test Audit (RATA) should be excluded from CEMS data availability calculation. When there are multiple pollutants monitored with a shared CEMS sampling system, spiking RATA for one pollutant may affect the data acquisition of the other pollutants.

Response WS-10: Excluding the hours for a spiking RATA from CEMS data availability is not necessary because the test would not have an adverse impact on emission monitoring for the pollutants with a shared CEMS sampling system. Spiking RATA is conducted to meet the RATA requirement for an analyzer with measured emissions under normal unit operation mostly falling below 10% of its upper span value. For example, it is common for sulfur monitoring at refineries when the lowest manufacturer's guaranteed analyzer span range cannot be lower to include data in the normal range. During a spiking RATA, a high concentration of calibration gas is injected into the sampling probe in order to bring the measured emission data to the normal range for the test. The injected gas is accurately gauged to a

percentage of total sample volume, typically 10 percent. As a result, all other pollutants are diluted by 10 percent. During a spiking RATA, actual emissions can be accurately calculated back by this dilution ratio for other affected pollutants. To aid in the enforceability of spiking RATA, staff could specify the emission determination for a spiking RATA period in the certification letter for any analyzer that potentially requires a spiking RATA.

Comment WS-11: A RATA should not be required when data availability drops below 95% within one quarter. Instead, such tests as the calibration or cylinder gas audit should be used instead of the RATA to demonstrate CEMS performance.

Response WS-11: When a CEMS is not able to provide valid data and thus result in low data availability, it is necessary to conduct a RATA to demonstrate CEMS performance integrity. Other tests, such as calibration or cylinder gas audit (CGA), or a QA/QC plan revision, are not able to provide this critical validation of CEMS performance. The CEMS would be more thoroughly evaluated by a RATA by requiring stack gases to be cleansed of interferents and moisture. During a RATA, the CEMS will also be required to adjust to changes in emission concentrations due to variability in process demands, which would be not be achieved by a calibration or CGA

Comment WS-12: The proposed rules should allow rental CEMS or rental analyzer to be utilized when the certified CEMS are not able to provide valid data.

Response WS-12: PR 218.3 (i) allows the use of a certified rental CEMS as a type of alternative data acquisition method. A revision was made to the proposed rules to allow alternative data acquisition for any period when the certified CEMS cannot provide valid data. Previously this alternative could only be applied due to a CEMS out-of-control period. With regards to utilizing a rental analyzer, a CEMS recertification as specified by PR 218.2(f) would be required because an analyzer is a component of CEMS, so integrating a rental analyzer to an existing CEMS essentially modifies the CEMS.

Comment Letter #2

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PAR 218.2 Section	Rule Language	Question/Comment	
(c)(7)	CEMS MODIFICATION means a modification to a CEMS component that is identified on the CEMS final certification letter, or a modification to the CEMS sampling interface, analyzer, or data acquisition and handling system that has a potential for adversely affecting the ability of the CEMS to provide accurate, precise, and timely data representative of emissions for the unit being monitored.	Since items like the DAHS computer are listed on the certification letter, CEMTEK suggests that this definition is clarified to remove "that is identified on the CEMS final certification letter" from this definition. This would still require facilities to treat any changes that could have an adverse impact on the accuracy and/operation of the CEMS as a CEMS Modification and thus require recertification activities. While removing confusion around components listed in the CEMS final certification letter that do not impact the accuracy of the CEMS.	2-1
(e)(3)	If there is a scheduled shutdown for the unit for a minimum of 168 consecutive hours, as demonstrated pursuant to paragraph (e)(4), the owner or operator of the CEMS is not subject to the requirements of paragraph (e)(1) after zero emissions have been recorded for a minimum of 4 hours after the unit shutdown, provided that the owner or operator of the CEMS:	Does this also apply to unplanned/forced shutdowns that will result in the unit being offline for a minimum of 168 hours?	2-2

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PAR 218.2 Section	Rule Language	Question/Comment	
(f)(5)	The owner or operator of the CEMS shall receive an initial approval of the CEMS application from the Executive Officer prior to the CEMS installation or modification.	Based on the definition of a CEMS Modification, replacing items such as an analyzer or an integral analyzer component such as a NOx converter or correlation wheel with an onsite spare would require the submittal and approval of a CEMS Application prior to replacing the defective part. This would cause the owner or operator of the CEMS to incur unnecessary amounts of downtime. Is it the district's intention to include replacement of CEMS components with on site spares in this requirement?	2-3

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Comment Letter #2

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PAR 218.3 Section	Rule Language	Question/Comment	
(f)(1)(A)	A seven-day calibration drift test shall be comprised of a series of eight (8) calibration error tests during a seven-day period performed once each day with an interval of 24 hours plus a 2-hour grace period for each test, when the CEMS is in continuous operation.	The rule language does not address the unit operating status during this test. Does the unit need to be combusting fuel, but not necessarily at a particular load, when the calibration error tests are performed? Is the seven-day period referring to seven calendar days or seven operating days?	2-4
(f)(1)(C)(i)	2.5 percent of the upper span value for pollutant and diluent analyzers.	Item 14 on form ST-220 currently allows Non-RECLAIM CEMS to be certified and maintained in accordance with 40 CFR 60 Appendix B and 40 CFR 60 Appendix F respectively. Will this option still be allowed? If not, then the DAHS will need to be configured to apply different pass/fail criteria to the diluent analyzers for Rule 218.3 and other federally applicable rules. This will unnecessarily overcomplicate the DAHS as there could be periods where the diluent analyzer is out of control in respect to Rule 218.3 but in control with federal requirements.	2-5

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PAR 218.3 Section	Rule Language	Question/Comment	
(f)(2)(A)	…the owner or operator of the CEMS shall make corrective actions within 8 hours of receiving the audible alert.	For facility's that are not staffed 24/7, 8 hours may not be enough time for the alarm to be received, someone to be called out to site, and to evaluate the problem and perform corrective actions.	2-6
(i)(3)	If the owner or operator of a certified CEMS is meeting the quality assurance requirements as specified in subdivision (g), data recorded and reported pursuant to paragraphs (i)(1) and (i)(2) shall be valid data for quantification, and available for the purpose of determining CEMS data availability.	Is this intent of this statement to say that recorded values that fall above 95%, or below 10%, of the upper span value for a span range that are recorded during a QA test can be reported as recorded for the purpose of that test?	2-7

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PAR 218.3 Section	Rule Language	Question/Comment	
(i)(4)(D)	Pollutant concentration correction by diluent gas shall be performed with the averaged value at the interval required for compliance demonstration.	Is the intent of this requirement that for an hourly average limit the average pollutant and diluent concentrations should be calculated for the hour and then the correction to a target diluent % should be done once using these hourly averages, as opposed to calculating a corrected value each minute and then averaging those calculated values?	2-8
(i)(5)(C)(i)(I)	Conduct a relative accuracy test audit within 45 days after the end of the calendar quarter with data availability below 95 percent, unless another relative accuracy test audit is scheduled for the same calendar quarter in compliance of any other rule or permit requirement	This seems overly punitive to the CEMS owner operator. There are components in a CEMS, that would cause downtime if they failed but would have no impact on the accuracy of the CEMS. **Example:** A NOx analyzer that is communicating to the PLC via hardwired 4-20 ma signals. If the analog output card failed, it would cause downtime, and if it took 5 days to get a replacement card delivered and installed it would trigger a RATA of the CEMS as this requirement is currently written. However, the component that failed only affected the ability of the analyzer to relay the data to the DAHS and did not affect the accuracy of the CEMS.	2-9

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PAR 218.3 Section	Rule Language	Question/Comment	
(i)(6)(D)(ii)(IV)	The use of standby CEMS shall be limited to a total of 6 months for any unit(s) within a calendar year	As written, it is unclear as to whether the standby CEMS usage limit of 6 months is on a per unit or per facility basis. Please clarify.	2-10

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Response to Comment Letter #2

Response 2-1: CEMS Data Acquisition and Handling System (DAHS), including the DAHS computer, is a vital component. The Technical Guidance Document R-002 (TGD R-002) specifies the required certification tests for the computer hardware change. Noting "CEMS final certification letter" provides clarity and ensures upgrade has been approved. On this basis, removal of this term from the definition is not recommended.

Response 2-2: Please see the Response to Comment WS-3.

Response 2-3: It is not the rule's intent to incur unnecessary CEMS downtime due to such actions as the replacement of components with onsite spares. For a CEMS modification required within 30 days due to CEMS failure (e.g., emergency repair), PR 218.2(f)(3) provides a recertification process that allows the owner or operator of the CEMS to conduct a modification before receiving an initial approval. This time-period should be sufficient to replace such CEMS components.

Response 2-4: The seven-day calibration drift is conducted during a seven-day period, which is seven calendar days. While CEMS operation is required during this period, there is no requirement for unit operating status.

Response 2-5: PRs 218.2 and 218.3 no longer provide the option to allow the less stringent certification and ongoing QA/QC requirements of Part 60 Appendices B and F for CEMS certification and ongoing QA/QC requirements. However, PR 218.3(i)(6)(A) provides a special consideration for publicly owned sewage-water-landfill facilities due to their unique operation as essential public services and administrative constraints. This type of facilities can continue to reference Part 60 Appendix F in determining CEMS out-of-control period if the QA/QC test fails based on a calibration error test. Ultimately, by the compliance schedule, DAHS will need to be configured to incorporate some other data handling requirements as well. A socioeconomic impact analysis considering the cost for software upgrade will be included in the staff report.

Response 2-6: Please see Response to Comment 1-5.

Response 2-7: Data below 10 percent of the upper span value have been considered valid under both Rules 218.1 and 2012, and will continue to be considered valid under PR 218.3 (i)(3). Data above 95 percent of the upper span value (spiking data) have been considered invalid under Rule 2012 (not specified in Rule 218.1). PR 218.3 (i)(2) proposes to report a spiking data at the 95% of the upper span value. This incorporates a threshold to prevent frequent occurrence of data spiking over 95% of the upper span value. PR 218.3 (i)(3) specifies spiking data as valid for calculations leading to quantification for compliance purposes and for CEMS data availability. This is based on the

condition that all applicable quality assurance requirements are met for the CEMS. This provision is intended for data of all periods of CEMS measurements, not to be confused for data recorded during a quality assurance test as raised by the commenter.

Response 2-8: The commenter's interpretation of the intent of this requirement is correct.

Response 2-9: For your comment regarding the requirement when CEMS data availability drops below the threshold for one quarter, please see the Response to Comment WS-11. With regards to the quoted example, the data relay process from an analyzer to the DAHS for computation is a vital part of the CEMS. When data is not recorded due to the analog output card failure, the accuracy of the CEMS cannot be demonstrated. In fact, some CEMS analyzers are configured to have the capacity to store data for a limited time. At the interim time of fixing a failed analog out card, CEMS data from the analyzer would be available to be retrieved.

Response 2-10: The usage limit is on a per unit basis not for the entire facility.

Comment Letter #3 -
Los Angeles County Sanitation Districts

Proposed Rule 218.2

(c)(7) CEMS MODIFICATION means a modification to a CEMS component that is identified on the CEMS final certification letter, or a modification to the CEMS sampling interface, analyzer, or data acquisition and handling system that has a potential for adversely affecting the ability of the CEMS to provide accurate, precise and timely data representative of emissions for the unit being monitored.

We would like to request that SCAQMD specify which modifications trigger recertification. Modification such as upgrading a computer will not affect CEMS' accuracy and should only require notification. 3-1

(d)(2)(C) The implementation date of a source-specific rule for which the CEMS shall be certified or recertified pursuant to paragraph (f)(2) or (f)(3) as part of the implementation.

Would the lower of the span range due to a new emissions limit trigger the recertification? The changes of span range only require calibration and do not require a RATA. Therefore, it will not have any adverse effects on the CEMS' accuracy. 3-2

(e)(2)
(B) Submit a report pursuant to paragraph (i)(3), if the CEMS failure or shut down has occurred for more than 24 hours; and
Per the Friday afternoon meeting, SCAQMD stated that the initial notification could be done verbally and follow by a written report. Please clarify the time limit for the written report submittal. 3-3

(f)(5) (B) Executive Officer shall notify the applicant that the application is complete, in writing within 60 calendar days of receipt of an application for a new CEMS, or within 30 calendar days of receipt of an application for a modification to an existing CEMS.
(C) If the owner or operator of the CEMS receives notification from the Executive Officer that the application meets the requirements of subparagraph (f)(5)(A), the owner or operator of the CEMS may commence the CEMS installation or modification.

If we do not receive the initial approval or notification of completion within the specified time-limit, would the application deemed approved? 3-4

(f)(11)(B) If the Executive Officer disapproves the final CEMS certification or recertification, the valid emission data pursuant to subparagraph (f)(11)(A) shall be retroactively considered invalid data that shall not be utilized for compliance demonstration or considered as available for CEMS data availability calculation, until the hour of the next time completing all the required certification tests pursuant to paragraph (f)(6).

Currently, SCAQMD typically takes 60 days or longer to review/approve. Therefore, we believe that this requirement may cause invalid data problems and impact data availability. 3-5

(i)(2) Excess Emission Reporting The owner or operator of the CEMS shall report the concentration level and/or emission rate, as applicable, in excess of the emission limit specified in the applicable rule within 24 hours or the next business day after such occurrence that includes:

Similar to (e)(2)(B), we believe that this requirement will create a significant burden on our operations and would like SCAQMD to consider revising the language to specify that initial notification can be done verbally and follow by a written report. Furthermore, this requirement appears to overlap the Title V requirement where the 500-N form is required. 3-6

(i)(4) (4) Scheduled CEMS Shutdown Reporting In the event of a scheduled CEMS shutdown pursuant to paragraph (e)(3), the owner or operator of the CEMS shall submit:
(A) An initial notification, at least 96 hours prior to the scheduled CEMS shutdown, specifying the scheduled date and time for unit non-operation and CEMS shutdown;
(B) A written report, within 24 hours of CEMS shutdown that the unit is non-operational and there are no emissions during the period of unit shutdown pursuant to paragraph (e)(4); and
(C) A final notification, at least 96 hours prior to the scheduled CEMS restart, specifying the scheduled time for the CEMS restart and unit restart.

There appears to be a significant amount of additional notifications and reporting, which will require additional human resources and may create a burden on our workforce. Furthermore, will SCAQMD provide forms to assist facilities in complying? 3-7

Proposed Rule 218.3

(d) Implementation Schedule
(d)(2) (A) The date an application is submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3) of Rule 218.2;

Since the effective date is January 1, 2025, for all existing units, if an existing unit triggers recertification, then only one unit must meet all the new requirements, including DAHS. Does this mean that there will be two systems running for identical CEMS before January 1, 2025? Would a facility be required to recertify all CEMS when only one unit is subject to R218.3? We would like SCAQMD to consider January 1, 2025, to be an effective date for all existing essential public service units regardless of whether any new application is submitted between January 1, 2022, and January 1, 2025 3-8

(f)(3)(E)
The owner or operator of the CEMS shall meet the following relative accuracy or de minimis value (no more than):
(i) For pollutant concentrations, a relative accuracy of 20.0 percent of the mean value of the reference method, or the de minimis concentration as follows:

Pollutant	De minimis
NOx	0.5 ppm
SO_2	2.0 ppm
CO	2.0 ppm (or the rule or permitted concentration limit for the unit when it is lower than 2.0 ppm)
Reduced Sulfur Compounds	4.0 ppm

We would like SCAQMD to consider a tiered approach for NOx emissions, such as 1 ppm if the emission limit is 5 ppm or higher and at 0.5 ppm if the emission limit is 5 ppm or less. Although SCAQMD lowered the de minimis limit based on "most facility has lower emissions limit," a significant number of existing units still have higher limits (> 5 ppm). Revising the de minimis level to 1 ppm would also be consistent with the 40 CFR 60 App. F, which requires 20% of RA or 10% of emission limit when the measured NOx is 50% or less than the emission limit. 3-9

(i)(1)(C) The owner or operator of the CEMS shall:
(i) Flag any data point that is recorded and reported pursuant to clause (i)(2)(A) and Subparagraph (i)(2)(B)(ii) as above 95 percent of upper span value for CEMS status code; and
(ii) Calculate a spiking data percentage for each calendar quarter using the following equation: Spiking Data Percentage = F/T x 100% Where: F is the amount of flagged one-minute data points recorded pursuant to clause (i)(2)(C)(i) for the calendar quarter during unit operation, excluding CEMS out of control period and the period when the unit is not subject to any emission limit; and T is the total amount of one-minute data points recorded for the calendar quarter during unit operation, excluding CEMS out-of-control period and the period when the unit is not subject to any emission limit.

We would like to confirm that this requirement is not applicable when a unit is not operating and on stand-by. 3-10

(i)(5)(C)
CEMS data availability threshold and subsequent requirements (i) When data availability of any analyzer falls below 95 percent for one calendar quarter, the owner or operator of the CEMS shall: (I) Conduct a relative accuracy test audit within 45 days after the end of the calendar quarter with data availability below 95 percent, unless another relative accuracy test audit is scheduled
for the same calendar quarter in compliance of any other rule or permit requirement; and

We believe that this requirement may not be suitable for a unit that operates on a limited basis because it may fall below 95%, especially for non-natural gas units. We request a 95% annual threshold rather than the proposed quarterly limit. 3-11

(i)(5)(C)(iii)
The Executive Officer may request the owner or operator of the CEMS to revise the QAQC plan whenever data availability of any analyzer falls below the 95 percent threshold.

Since the RATA would not improve data availability, we request SCAQMD allow a revision to the QAP as the first step when responding to data availability falling below the 95% threshold. 3-12

Response to Comment Letter #3

Response 3-1: Please see the Response to Comment 2-1.

Response 3-2: The CEMS analyzer span range setting is identified in the CEMS certification letter. The CEMS recertification applies if the analyzer span range setting is modified to demonstrate compliance with a new emissions limit required by a source-specific rule. This modification may not trigger a full set of certification tests. However, through the recertification process, the system will be evaluated and a revision to the certification letter will be issued to reflect the description of the CEMS.

Response 3-3: Staff agrees with the commenter. PR 218.2 (e)(2)(B) and PR 218.2 (i)(3) have been revised, specifying the requirement as a notification that is complied by calling 1-800-CUT-SMOG.

Response 3-4: The initial approval ensures that the application package is complete. It will be issued before the application is subject to further evaluation for a final approval. The owner or operator of the CEMS may contact staff at any time during the evaluation process regarding the application.

Response 3-5: PR 218.2 retains the existing CEMS certification process. In addition, PR 218.2 (f)(7) specifies that the owner or operator of the CEMS will be notified of a timeline for the final approval once the application package is deemed complete. The certification tests are required to be conducted by testing laboratories or firms approved through the South Coast AQMD Laboratory Approval Program. These testing laboratories or firms are highly qualified with a reputation of submitting certification test reports that are typically found to be approvable. On this basis, the commenter should be reasonably confident with the application timeline and the potential validity of the interim data.

Response 3-6: Staff agrees with the commenter. PR 218.2 (i)(2) has been revised to change the word “report” to “notify the Executive Officer by calling 1-800-CUT-SMOG”.

Response 3-7: As mentioned in the previous response, PR 218.2 (i)(2) has been revised to specify the initial and final notifications as “by calling 1-800-CUT-SMOG”. In addition, the period for the final notification has been shortened from 96 hours to 8 hours prior to the scheduled CEMS restart. The proposed rule specifies the required information is to be provided in a written report. To assist the owner or operator with their written report submittal, staff will work with the stakeholders in the development of streamlined reporting forms. This endeavor is planned as part of the PR 218.2 and 218.3 electronic reporting implementation Working Group meetings.

Response 3-8: Staff agrees with the commenter. PR 218.2 (d) and PR 218.2 (d) have been revised such that the owner or operator of a publicly owned sewage-water-landfill facility (defined in the rule) would be subject to PR 218.2 and PR 218.3 by January 1, 2025, or the implementation date of a source-specific rule for which the CEMS shall be certified or recertified, whichever is later.

Response 3-9: Staff agrees with the commenter. PR 218.3 (f)(3)(E) has been revised to allow the 1.0 ppm *de minimis* standard when the rule or permitted concentration limit for the unit is higher than 5.0 ppm.

Response 3-10: A unit non-operation period will not be counted in the spiking data percentage calculation. If there are any emissions during a unit's stand-by period, they are not expected to be in the spiking data percentage calculation either.

Response 3-11: Staff understands the concern for a unit that operates on a limited basis or unit combusting non-natural gas fuel is that emissions could spike more frequently and have revised the rule to provide relief from the spiking requirements when operating at low use. With regard to data availability from low use units, it should be noted that under PR 218.3 (i)(3), spiking data recorded pursuant to PR 218.3 (i)(2) will be considered valid data and, thus, considered available for the purpose of calculating CEMS data availability. In addition, the rule provides for units to exclude certain data such as when the unit is under maintenance or auditing. Therefore, for a unit that operates on a limited basis or unit combusting non-natural gas fuel, there should be no additional challenge on meeting the CEMS data availability requirements.

Response 3-12: Please see the Response to Comment WS-11

Comment Letter #4 -
Orange County Sanitation District

Proposed Rule 218.2 – December 2020 Draft

1. (d)(2) For a CEMS certified to comply with Rules 218 and 218.1, the owner or operator of the CEMS shall meet the requirements of this rule no later than:
   (A) The date an application is submitted to the Executive Officer between January 1, 2022 and January 1, 2025 for any CEMS certification or recertification pursuant to paragraph (f)(2) or (f)(3)

   This reads as "CEMS shall meet the requirements of this rule at the time of application submittal date which means it is possible that a facility would have to follow the 218.3 requirements (including DAHS and QAP updates) as early as 1/1/22 if you have to submit a recertification application on that date. At the 1/6/21 meeting AQMD clarified that the implementation date is 1/1/25 if no certification or recertification applications are submitted between 1/1/22 and 1/1/25. 4-1

   OC San has 8 identical CEMS units. If one unit requires a re-certification before 2025, it would be subject to different requirements than the rest of the units. We request one implementation date of 2025 for all CEMS units that are certified to 218 and 218.1.

2. (e)(2)(B) Submit a report pursuant to paragraph (i)(3), if the CEMS failure or shut down has occurred for more than 24 hours; and

   The current practice is to verbally notify AQMD (via 1-800-cut-smog) of any CEMS failures or shutdowns lasting more than 24 hours and then submit a written report with the semi-annual monitoring reports in accordance with Title V form 500-N. Is that the intent of this statement or, does a written report need to be submitted in lieu of the verbal notification? 4-2

3. (e)(3) If there is a scheduled shutdown for the unit for a minimum of 168 consecutive hours, as demonstrated pursuant to paragraph (e)(4), the owner or operator of the CEMS is not subject to the requirements of paragraph (e)(1) after zero emissions have been recorded for a minimum of 4 hours after the unit shutdown, provided that the owner or operator of the CEMS:

   Should be revised (delete scheduled?) to allow for unforeseen shutdown (e.g. engine failure) 4-3

4. (f) Certification Requirements

   General comment - Requirements in provision (f) should be streamlined; they are difficult to follow. 4-4

5. (f) (1) (B) Modified for any component that is either listed on the certification letter, Technical Guidance Document R-002, or Quality Assurance/Quality Control Plan such that it may adversely impact the accuracy and precision of the CEMS measurements

Non-RECLAIM facilities are not familiar with TGD R-002. This section should be consistent with the guidelines in Part 3 of ST-220 Form - APPLICATION FOR MODIFICATION (AND RECERTIFICATION) OF RECLAIM AND NON-RECLAIM CONTINUOUS EMISSIONS MONITORING SYSTEMS (CEMS) which contains the Matrices for QA requirements. One issue we have with these Matrices is that it is unclear which QA activity requires submittal of the recertification application. We also suggest limiting the list of components to those listed in these Matrices. 4-5

6. (f)(5) The owner or operator of the CEMS shall receive an initial approval of the CEMS application from the Executive Officer prior to the CEMS installation or modification.

   In addition to the comment provided for (f)(1)(B) above, we ask for streamlined process for replacement of components with identical components especially those we keep as spare parts onsite. We will incur more downtime if we need to wait for the approval of the CEMS application. 4-6

7. (f)(6)(C) If the unit is not operating at the time of completion of the CEMS installation, then the owner or operator of the CEMS shall conduct the certification tests of the CEMS within 90 days from the next start-up of the unit monitored by the CEMS in accordance with clause (f)(6)(B)(i) or (f)(6)(B)(ii).

   The clock should start once the unit resumes normal operation – e.g. startup after an engine overhaul there may be a break in period; there may be a multiple startup attempts. 4-7

8. (f)(6)(D)(ii) No later than 45 days of completing a certification test, the owner or operator of the CEMS shall submit the test report to the Executive Officer.

   The 45-day period is too short depending on the scope of testing. For consistency with other test reports, we request 60days. 4-8

9. (f)(8) Modification of CEMS Component Listed in Guidance Document R-002 For a CEMS modification on a component that is not identified on the CEMS final certification letter but is listed on the South Coast AQMD Technical Guidance Document R-002, the owner or operator of the CEMS shall either meet the requirements specified in paragraph (f)(2), or (f)(3) or the alternative CEMS certification requirements. The owner or operator of the CEMS that elects to meet the alternative CEMS certification requirements shall:

   See comment for (f)(1)(B) above. In addition, if a component is not listed in the Matrices then it should not be listed in the certification letter. 4-9

10. (f)(10) For a CEMS modification on a component that is not identified on the CEMS final certification letter or listed in the South Coast AQMD Technical Guidance Document R-002,

but is listed in the Quality Assurance/Quality Control Plan, the owner or operator of the CEMS shall:

See comment on (f)(1)(B) and (f)(8). In addition to the components listed in the CEMS description, there are numerous components mentioned throughout our QAP. Each time any of these components are replaced/modified, we would have to evaluate if it may adversely impact the accuracy and precision of the CEMS measurements. 4-10

11. (i) Reporting Requirements

Reporting requirements should be consistent with existing reporting requirements in source-specific rules or permits in order to avoid any additional redundant reporting. Reporting mechanism should be clearly defined. 4-11

12. (i)(2) Excess Emission Reporting

When determining excess emissions, CEMS out-of-control period and the period when the unit is not subject to any emission limit should be excluded similar to the spiking data percentage calculation. Reporting requirements should be as specified in the source-specific rule. Proposed requirement to report within 24 hours is too stringent. Although we rarely ever have excess emissions as our engines are subject to the 24-hr averaging period, 24-hr is just not enough to determine if the excess emissions were due to an engine, catalyst system, urea injection system, or CEMS. We request that the excess emissions reporting time frame be consistent with the Title V permit and Form 500-N (Section II.1.c) requirement which is a verbal reporting within 72 hours and submitting a written report within 14 days. We also report these same incidents in Rule 1110.2 quarterly reports. 4-12

Proposed Rule 218.3 – December 2020 Draft

13. (f)(1)(A) A seven-day calibration drift test shall be comprised of a series of eight (8) calibration error tests during a seven-day period performed once each day with an interval of 24 hours plus a 2-hour grace period for each test, when the CEMS is in continuous operation.

    Are there any unit operational requirements for this test (e.g. unit must be operating)? 4-13

14. (g) Quality Assurance Testing Requirements and Specifications

    The main issue is with the R218.1 and PR218.3 daily CD requirements. Per App. F, CEMS is out of control (OOC) if daily CD exceeds two times the performance standard (2.5% Span) for 5 consecutive days and is OOC from time of previous passed CD if CD>4 x PS (go back 24 hours). Per R218.1 and PR218.3, CEMS is OOC if CD > 2 x PS and requires corrective actions immediately (even on weekends and holidays). Calibration drift more than 2 x PS (but less than 4xPS) may not always caused by CEMS malfunction and are corrected by conducting another calibration. OC San uses outside contractor to maintain and troubleshoot our CEMS units and requiring immediate corrective actions to be taken especially on weekends and holidays imposes undue compliance burden. 4-14

15. (i)(2)(C)(ii) Calculate a spiking data percentage for each calendar quarter using the following equation:

    For CEMS with dual/multi-range analyzers, would this apply to the highest range only? 4-15

16. (i)(4)(D) Pollutant concentration correction by diluent gas shall be performed with the averaged value at the interval required for compliance demonstration.

    Please confirm for facilities with longer than 1-hr averaging period (e.g., 24-hr), the correction takes place at the end of 24-hr period based on the average of twenty-four (24) 1-hr averages of pollutant and diluent concentrations. 4-16

17. (i)(5)(C)(i) When data availability of any analyzer falls below 95 percent for one calendar quarter, the owner or operator of the CEMS shall:

    What if an analyzer failure occurs due to a broken part and that part is not available for several days? Not every analyzer component failure adversely impacts the accuracy of the CEMS data (an example would be an analog output card on an analyzer that communicates using 4-20 ma signals). This requirement seems overly punitive as there are situations (like the one described above) where CEMS data could be invalid, but the root cause for the missing data has nothing to do with the accuracy of the CEMS. Facilitating RATA as with any other source testing is resource intensive and causes operational disruption. There could 4-17

    also be a scheduling issue with a RATA source tester not being available within the 30-day window. 4-17 (cont'd)

Response to Comment Letter #4

Response 4-1: Please see the Response to Comment 3-8.

Response 4-2: Please see the Response to Comment 3-3.

Response 4-3: Please see the Response to Comment WS-3.

Response 4-4: Staff understands that PR 218.2 (f) Certification Requirements is describing a set of complicated requirements. To better understand the requirements as applied to each facility staff has included a flow chart in the staff report that will help the stakeholders follow the requirements in step-by-step manner. In addition, staff will continue to work with stakeholders to provide clarifications with regards to the CEMS certification and all other PR 218.2 and 218.2 requirements.

Response 4-5: The Technical Guidance Document R-002 (TGD R-002) content is the same as information found in Part 3 of the ST 220 form. With regards to the recertification application, PR 218.2(f) specifies the processes that are dependent on the type of CEMS modifications. Please see the Response to Comment WS-6 on limiting the list of components for recertification. While there is uniqueness for various CEMS, staff can work with stakeholders on a case-by-case basis to determine if the list of components for recertification at modification for their specific CEMS can be further reduced.

Response 4-6: For a CEMS modification required within 30 days due to CEMS failure, PR 218.2 (f)(3) allows the modification to be conducted prior to the application process and any approval.

Response 4-7: Staff agrees with the commenter. PR 218.2 (f)(6) has been revised accordingly.

Response 4-8: The 45-day period is the existing requirement under 218. On this basis, staff does not recommend any changes.

Response 4-9: Please see the Response to Comment 4-5. In addition, a component not listed in the Matrices (i.e., TGD R-002) is generally not listed in the certification letter. However, the analyzer span range is an exception to this listing. The certification letter identifies the span range setting and the Technical Guidance Document R-003 (TGD R-003) specifies the test requirement for a span range change. Staff has revised PR 218.3 (f)(6) to add TGD R-003 for certification test guidance.

Response 4-10: Please see the Response to Comment WS-6

Response 4-11: Based on this comment and commenter's previous questions in the Working Group Meetings, staff believe the commenter's concern focuses on the CEMS breakdown reporting required by both Rule 1110.2 and PR 218.2. While Rule 1110.2 requires the breakdown to be included in a quarterly

report, PR 218.2 requires CEMS breakdown to be reported by calling 1-800-CUT-SMOG within 24 hours of the next business day of occurrence, and then included in the CEMS semi-annual emission summary report. Both the Rule 1110.2 quarterly report and PR 218.2 semi-annual report include many other reporting elements. For information integrity and a thorough evaluation, breakdown should be included the breakdown information in the CEMS semi-annual emission summary report.

Response 4-12: When CEMS is in the Out-Of-Control period, CEMS data would not be valid to determine excess emissions. On the other hand, when the unit is not subject to any emission limit, there would not be any excess emissions. The excess emission reporting is the existing requirement in Rule 218. PR 218.2 (i)(2) has been revised to allow a verbal reporting by calling 1-800-CUT-SMOG.

Response 4-13: Please see the Response to Comment 2-4

Response 4-14: Please see the Response to Comment 2-5

Response 4-15: As specified in PR 218.3 (i)2)(C), the data recorded in PR 218.3 (i)(2)(A) and PR 218.3 (i)(2)(B)(ii) will be counted as spiking data in the calculation. For CEMS with dual/multi-range analyzers, this applies to the highest range only.

Response 4-16: The commenter's understanding is correct for the diluent correction. However, if the source-specific rule or a permit condition defines it differently, the source-specific rule or a permit condition requirement would supersede the requirements specified in PR 218.3.

Response 4-17: Please see the Response to Comment 2-9. In addition, PR 218.3(i)(5)(C)(i)(I) has been revised to extend the relative accuracy test audit due date from 30 days to 45 days after the CEMS data availability falls below the threshold.

Comment Letter #5

January 22, 2021

Ms. Yanrong Zhu
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Ms. Zhu:

Subject: Los Angeles Department of Water and Power's (LADWP) Comments on Proposed Rule 218.2 – Continuous Emission Monitoring System: General Provisions, and Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications

LADWP appreciates the opportunity to provide comments on the Proposed Rule 218.2 – Continuous Emission Monitoring System (CEMS): General Provisions, and Proposed Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications. LADWP remains committed to working with the South Coast Air Quality Management District (SCAQMD) to develop effective policies for monitoring emissions from major facilities in order to meet air quality goals in the South Coast Air Basin.

LADWP operates seven combined cycle units, four boilers units and 14 simple cycle units, each with a dedicated CEMS currently certified under SCAQMD Rules 2012, 218, 218.1 and 40 CFR Part 75. Six of the seven combined cycle units and six of fourteen simple cycle units are dual fuel units capable of combusting both natural gas and diesel fuel, with the latter only used for emergency. The CEMS for these dual fuel units are certified to measure NOx and CO emissions from both natural gas and diesel combustion.

Comments on Proposed Rule 218.2 –
Continuous Emission Monitoring: General Provisions

Section (f) – Certification Requirements.

As mentioned above, a total of 12 LADWP generating units are capable of combusting natural gas and diesel as an emergency fuel with CEMS that are certified to measure 5-1

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both fuels. The CEMS for these units completed certification testing in 2016 while combusting diesel fuel. The Proposed Rule 218.3 Section (d)(3) requires that CEMS certified under Rule 2012 must be recertified within 24 months after the NOx RECLAIM facility has been notified as a former RECLAIM facility. The certification requirements in Rule 218.2, Section (f) do not address CEMS recertification requirements for dual fuel units or units that combust diesel as an emergency fuel. LADWP recommends that SCAQMD include language in the rule that clarifies that CEMS certification or recertification is only required for the primary fuel. 5-1 (cont'd)

Section (f)(10)(A) to (C) - Modification of CEMS Component Listed in Quality Assurance/Quality Control Plan

LADWP believes that maintaining the CEMS according to the Quality Assurance (QA)/Quality Control (QC) Plan, logging all maintenance work, and making the records available to the SCAQMD inspector is justified and sufficient for compliance. LADWP maintains 25 CEMS units that are periodically QA/QC tested and ensures that the corresponding test results are made available to SCAQMD. Requiring facilities to notify SCAQMD, submit revised QA/QC Plans, and conduct testing for the replacement of CEMS components, including those not listed in the CEMS Certification or the Technical Guidance Document R-002 seems more than reasonable. Because the justification for the additional requirements remains unclear, LADWP recommends that SCAQMD limit this requirement to components listed in the CEMS Certification. 5-2

Comments on Proposed Rule 218.3 – Continuous Emission Monitoring Performance Specifications

Section (g)(1)(B) – Calibration After Unit Restart

This section requires a calibration error test to be performed within four hours of the unit restart, if the unit restart is after a period longer than the testing cycle specified in subparagraph (g)(1)(A) when no emissions are generated. LADWP operates four combined cycle units that have a six-hour cold start permit time limit. If calibration is performed prior to completion of a cold startup, the CEMS could fail calibration. and result in out-of-control periods and other inconsistencies following a unit restart. To allow sufficient time for units to reach compliance following a startup and CEMS to be properly calibrated, LADWP recommends that SCAQMD aligns this section with 40CFR Part 75 which allows an 8-hour grace period after unit restart. 5-3

Section (g)(2)(D) – 14-Day Grace Period for a Relative Accuracy Test Audit

LADWP supports SCAQMD allowing the relative accuracy test audit (RATA) to be performed within 14 days after the unit is restarted if the unit is not operating or generating emissions when a RATA is due. However, the 14-day grace period after unit restart is not enough time to perform the RATA especially when a unit has been inoperable for an extended period. LADWP typically performs a series of tests to ensure reliable and safe operation of the unit before a RATA can be performed. Critical tests such as "balance shot" tests intended to balance the turbine rotor and generator rotor must be performed following a repair that lasts several months to ensure that the unit operates within the Original Equipment Manufacturer vibration limits. In many cases, getting the unit to finally operate within its vibration limits would involve several sets of these tests, each requiring several days to a week to complete. In addition, these tests are sometimes further delayed by having to restart the unit, run it intermittently, and then turn it off for a few days in order to perform necessary adjustments to the unit. In such cases, the 14-day grace period will be used up quickly. LADWP recommends that SCAQMD allow 14-unit operating days instead of 14 calendar days after first firing of the unit to perform the RATA. 5-4

Section (i)(4)(A)(ii) – Emission Data Averaging During Maintenance and Quality Assurance Activities

If the unit operates in two or more quadrants of the hour during a maintenance or QA hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourly average. Under Rule 2012, maintenance hours are considered valid hours if there is a minimum of two valid 15-minute quadrants, each having a minimum of one valid data point. There is currently no requirement to have a 15-minute separation between the two data points during a maintenance hour. In the absence of a justification for the 15-minute separation requirement, LADWP recommends that the proposed 15-minute separation between the two valid data points be removed. 5-5

Section (i)(5)(A) – CEMS Availability

The formula for calculating the quarterly CEMS Data Percent Availability provided in this section is based on unit operating hours rather than CEMS operating hours. This formula poses problems for LADWP's peaking units that do not operate often to meet the 95 percent CEMS availability threshold requirement in Section (i)(5)I. For example, Harbor Generating Station Units 10-14 had an average of 56 operating hours per quarter for the past five years. If these units continue to operate at the same rate, it will 5-6

only take a few out-of-control hours for the percent availability to drop below 95 percent. If this persists, LADWP would have to perform a RATA every quarter or worse, recertify the CEMS every 6 months as required by Section (i)(5)(C)(i) and (ii). RATA and recertification tests are not only costly but are also very involved, requiring close coordination with the Energy Control Center which is responsible for scheduling and dispatching the generating units. To properly account for availability regardless of whether the units run continuously or occasionally, LADWP recommends that SCAQMD use CEMS operating hours instead of unit operating hours in calculating the Data Percent Availability.

LADWP also recommends that start up and shut down hours be excluded from the 95% data availability calculation requirements for units with a startup and shutdown permit emission limit. Many of LADWP's units have startup and shutdown emission limits. Startup and shutdown periods do not always start at the top of the hour and therefore, are recorded in terms of partial hours. For example, a startup that occurs 50 minutes into the hour (12:50) would not have two valid 15-minute quadrants in that hour. Similarly, a shutdown that concludes at 1:10 would also not have two valid 15-minute quadrants. LADWP recommends revising subparagraph (i)(5)(B)(i) to expand the exclusion of startup and shutdown periods from the data availability calculation to include equipment subject to startup and shutdown permit emission limits.

5-6 (cont'd)

LADWP requests SCAQMD's consideration of these comments and the other stakeholder's comments and looks forward to working with SCAQMD for further development and changes to these rules.

If you have any questions or would like additional information, please contact Ms. Andrea Villarin of my staff at (213) 367-0409.

Sincerely,

Katherine Rubin
Manager of Air and Wastewater Quality and Compliance

LL:
c: Mr. Michael Krauss (SCAQMD)
Mr. Gary Quinn, PE (SCAQMD)
Ms. Andrea Villarin (LADWP)

Response 5-1: Certification tests required by PR 218 and 218.3 are based on span ranges or as-found unit operating condition, instead of primary or backup fuels. Tests, such as seven-day calibration drift, are for each span range that requires CEMS operation with no unit operation requirement. On the other hand, tests, such as relative accuracy test audit, are conducted in the as-found unit operating condition. Therefore, a rule clarification on the CEMS certification or recertification for primary fuel only would not be necessary. If deemed necessary, during the Executive Officer's evaluation there may be required additional testing as a condition on the certification letter (e.g., testing at combusting diesel back up fuel). Such an evaluation would be made on a case-by-case basis, if deemed necessary.

Response 5-2: Please see the Response to Comment WS-6.

Response 5-3: A calibration error test is conducted by introducing a calibration gas at the sampling probe, and the analyzer makes measurement for the injected calibration gas. Unit operation status would not have an impact for the test.

Response 5-4: Staff agrees that a unit restart may involve intermittent runs with necessary adjustments. PR 218.3 (g)(2)(D) has been revised to specify that the test would be performed within 14 days after the unit is restarted and resume normal operation.

Response 5-5: PR 218.3 (i)(4) proposes to apply the Part 60/Part 75 emission data averaging method, which includes the15-minute separation requirement for a minimum two valid data points for a maintenance and quality assurance hour. This data handling method has been utilized for non-RECLAIM CEMS and widely applied by other regulatory agencies. Staff understand that the emission data averaging method is different for RECLAIM CEMS. The difference is not only on the commented 15-minute separation for maintenance or QA hours, but also on the definition of a valid maintenance or QA hours, the number of those hours allowed, and the method of computing hourly average from 1-minute data. On this basis, staff recommends maintaining the proposal in aligning with Part 60/Part 75 emission data averaging method for consistency.

Response 5-6: Please see Response to Comment 3-11 for an explanation on why CEMS data availability would not be adversely impacted by limited unit operation. Similarly, the spiking at startup and shutdown with an emission limit should not be a concern with regards to CEMS data availability because the spiking data recorded pursuant to PR 218.3 (i)(2) will be considered as valid data, as specified in PR 218.3 (i)(3).

Proposed Rule 218.2
Continuous Emission Monitoring System: General Provisions

Proposed Rule 218.3
Continuous Emission Monitoring System: Performance Specifications

Proposed Amended Rule 218
Continuous Emission Monitoring

Board Meeting
March 5, 2021

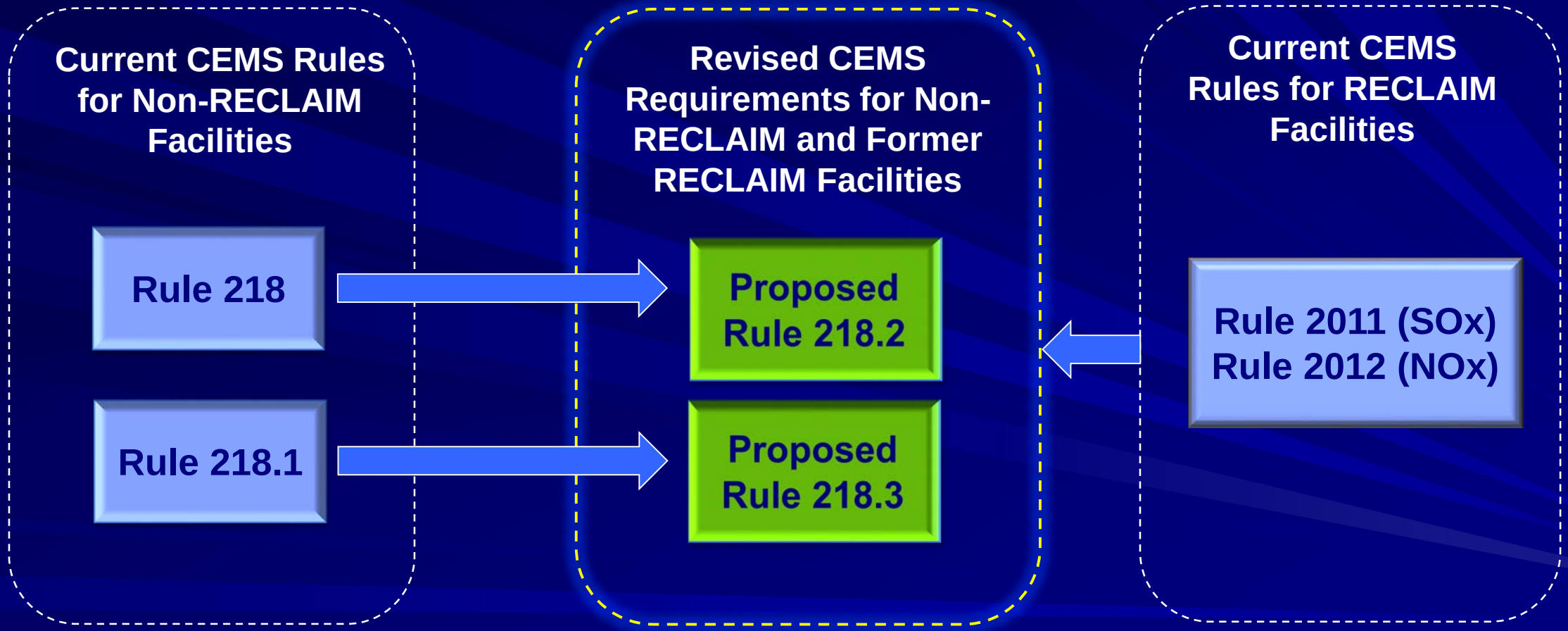
Background

- Various rules and permits require continuous emission monitoring system (CEMS) to continuously measure pollutant concentrations or emissions to determine compliance
- CEMS rules provide specifications for proper installation and operation to ensure accuracy and precision of the CEMS
- Amendments to CEMS rules are needed to:
  - Address CEMS requirements for facilities that transition from RECLAIM to a command-and-control regulatory structure including alignment with federal regulations and correlating with landing rules
  - Streamline and provide additional clarifications and flexibility pursuant to stakeholders' request
  - Codify existing practices to improve transparency

Continuous Emissions Monitoring Systems (CEMS)

- A CEMS generally consists of an in-stack sampling probe, an analyzer, and a data acquisition and handling system
- CEMS are currently required for the largest combustion sources (generally > 40 MM Btu/hour)
  - ~ 80 RECLAIM facilities have units with CEMS
  - ~ 120 non-RECLAIM facilities have units with CEMS
- Requirements to install CEMS are specified in source-specific rules or RECLAIM rules
- CEMS rules are very detailed and technical to ensure data collected is accurate

Rule Approach



Implementation Schedule

All CEMS will transition to PR 218.2 and 218.3 by one of the following three pathways (whichever is later)

Pathway 1

New or Modified CEMS within Specified Window

- At certification or recertification (after exiting RECLAIM for RECLAIM CEMS)

Pathway 2

If No Recertification During Timeframe of Pathway 1

- January 1, 2025 for Non-RECLAIM CEMS
- 24 months after exiting RECLAIM for RECLAIM CEMS

Pathway 3

Rule Compliance Date

- Implementation date in landing rule for CEMS certification or recertification

Proposed Rule 218.2

- Based on Rule 218 and establishes administrative requirements for CEMS
- Implementation schedule addresses certification and re-certification of all CEMS for non-RECLAIM and former RECLAIM facilities
- Most revisions improve the clarity with no substantive change
- Includes new provision for Monitoring Requirements (e)

(a) Purpose
(b) Applicability
(c) Definitions
(d) Implementation Schedule
(e) Monitoring Requirements
(f) Certification Requirements
(g) Quality Assurance/Quality Control Plan
(h) Recordkeeping Requirements
(i) Reporting Requirements
(j) Certification Posting
(k) Exemption

Key Changes to Proposed Rule 218.2

Aligning with the Federal Requirements or RECLAIM rules

- Provisionally validates CEMS data recorded during the certification or recertification period
- Allows additional hours for CEMS to not operate when CEMS fails

Addressing Stakeholder Comments

- Streamlines the procedure for emergency repair

Providing Flexibility

- Allows scheduled CEMS shutdown during long-term shutdown periods of basic equipment

Codifying existing practices to improve transparency of requirements

- Incorporates simplified recertification processes for qualified CEMS modifications

Proposed Rule 218.3

- Based on Rule 218.1 and establishes CEMS performance specifications
- Key revisions:
  - Pre-certification requirements - subdivision (e)
  - Calibration gas and zero gas – subdivision (h)
- New data handling provisions added to subdivision (i)

(a) Purpose

(b) Applicability

(c) Definitions

(d) Implementation Schedule

(e) Pre-Certification Requirements

(f) Certification Test Requirements

(g) Quality Assurance Testing Requirements

(h) Calibration Gas and Zero Gas

(i) Data Handling

(j) SCEMS Requirements

(k) Moisture Correction

(l) Exemption

Tables and Attachments (e.g., Equations)

Key Changes to Proposed Rule 218.3

Aligning with Federal Requirements or RECLAIM rules

- Defines how to calculate hourly emission average
- Provides more options for calibration gas used for various quality assurance tests

Addressing Stakeholder Comments

- Specifies CEMS data availability calculation and subsequent requirements when data availability falls below a threshold

Providing Flexibility

- Defines span range setting for capturing monitored data for specific situations
- Allow spiking data to be valid data with a threshold set for the percent of spiking data (would avoid data loss and provide data in assessing excess emissions)

Recognizing Lower Limits in Rules

- Revises NOx de minimis standard from 1.0 ppm to 0.5 ppm for Relative Accuracy Audit Tests

Public Process

- Rule development started in 2018 with first working group meeting in March 2019
  - 11 working group meetings
  - 23 key topics discussed in detail
- Conducted stakeholder meetings address their comments
- There is no remaining key issues

Staff Recommendations

- Adopt the Resolution:
  - Determining that Proposed Amended Rule 218, Proposed Rule 218.2, and Proposed Rule 218.3 are exempt from the requirements of the California Environmental Quality Act; and
  - Amending Rule 218, and Adopting Rule 218.2 and Rule 218.3

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 32

PROPOSAL: Approve and Adopt Technology Advancement Office Clean Fuels Program 2020 Annual Report and 2021 Plan Update, Resolution and Membership Changes for Clean Fuels Advisory Group and Receive and File Updated Membership of Technology Advancement Advisory Group

SYNOPSIS: Each year by March 31, the South Coast AQMD must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year for the Clean Fuels Program. This action is to approve and adopt the Technology Advancement Clean Fuels Program Annual Report for 2020 and 2021 Plan Update and the Resolution finding that proposed projects do not duplicate any past or present programs. These actions are to also approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group and receive and file membership changes to the Technology Advancement Advisory Group.

COMMITTEE: Technology, February 19, 2021; Recommended for Approval

RECOMMENDED ACTIONS:

1. Approve and adopt the attached Technology Advancement Office Clean Fuels Program 2020 Clean Fuels Annual Report and 2021 Plan Update and include it in the South Coast AQMD's Clean Fuels Program;
2. Adopt the attached Resolution finding that the Technology Advancement Office Clean Fuels Program Plan Update for 2021 and its proposed projects do not duplicate any past or present programs of specified organizations;
3. Approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group; and
4. Receive and file membership changes to the Technology Advancement Advisory Group.

Wayne Nastri
Executive Officer

MMM:NB:JI:MAW

Background
Achieving federal and state ambient air quality standards within the South Coast Air Basin (Basin) will require emission reductions from both mobile and stationary sources beyond those available from existing technologies. The 2016 AQMP includes measures relying 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 2016 AQMP projects that a 45 percent reduction in NOx by 2023 and an additional 55 percent reduction by 2031 is required, the majority of which must come from mobile sources (both on- and off-road). This goal requires widespread deployment of clean air technologies as well as further commercialization of advanced technologies. South Coast AQMD staff has initiated work on an update to the AQMP, which will likely continue to emphasize the need for significant NOx reductions from mobile sources to achieve federal and state ambient air quality standards in future years.

California Code, Health and Safety Code (H&SC) 40448.5(e), calls for the Clean Fuels Program to consider, among other factors, the current and projected economic costs and availability of fuels, the cost-effectiveness of emission reductions associated with clean fuels compared with other pollution control alternatives, the use of new pollution control technologies in conjunction with traditional fuels as an alternative means of reducing emissions, potential effects on public health, ambient air quality, visibility within the region, and other factors determined to be relevant by South Coast AQMD. The Legislature recognized the need for flexibility, allowing focus on a broad range of technology areas, including cleaner fuels, which can help South Coast AQMD in achieving its clean air goals.

The Technology Advancement Office (TAO) Clean Fuels Program is an integral part of South Coast AQMD efforts to achieve the significant NOx reductions called for in the 2016 AQMP. In its first 32 years, from 1988 to 2020, the Clean Fuels Program leveraged $343 million into $1.55 billion in projects, mainly through public-private partnerships in conjunction with private industry, technology developers, academic institutions, research institutions and government agencies. This public-private partnership approach has enabled South Coast AQMD to historically leverage public funds with outside investment in a ratio of about $4 of outside funding to every dollar of Clean Fuels funding. More than ever before, the Clean Fuels Program must both foster and accelerate advancement of transformative transportation, and off-road technologies where possible, with an emphasis on zero and near-zero emissions vehicle and fuel technologies. This is especially true given the region’s economic dependence on thriving goods movement, along with the corresponding impact of that industry on environmental justice communities. The Clean Fuels Program and the Carl Moyer Program, as well as other incentive programs, provide a unique synergy to push market penetration of the technologies developed and demonstrated by the Clean Fuels Program. This synergy

enables South Coast AQMD to act as a leader in both technology development and commercialization efforts targeting reduction of criteria pollutants.

South Coast AQMD is required by H&SC Section 40448.5.1 to adopt a plan that describes the expected cost and benefits of proposed projects prior to any Clean Fuels Program expenditures 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 as well as a 30-day public notice to specified interested parties and the public prior to the annual public hearing at which the Board considers action on the Clean Fuels Program. SB 98 also requires the preparation of an annual report with specified contents that include the prior year's accomplishments. This annual report requires review by an advisory group and approval by the Board, prior to submittal to specified offices of the California Legislature each year. This legislation also specifies the make-up of the 13-member SB 98 Clean Fuels Advisory Group and its primary responsibility which is to make recommendations regarding the most cost-effective projects that advance and implement clean fuels technology and improve public health. The membership of the SB 98 Clean Fuels Advisory Group was initially approved by the Board in September 1999. Changes to the composition are reviewed by the Technology Committee on an as-needed basis, subject to full Board approval as required by the charter. Prior to the formation of the SB 98 Clean Fuels Advisory Group, South Coast AQMD had formed the Technology Advancement Advisory Group (TAAG) to review and assess the Clean Fuels Program. The charter and membership of the TAAG was revised in 1999 with formation of the SB 98 Clean Fuels Advisory Group so the functions of the two advisory groups would be complementary. The TAAG's charter specifies membership changes must be approved by the Technology Committee.

Proposal

These actions are for the Board to approve and adopt the TAO Clean Fuels Program 2020 Annual Report and 2021 Plan Update and, as part of the Board's consideration of the 2021 Plan Update, to make a finding that the update 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 South Coast AQMD efforts do not duplicate projects. The advisory groups provide feedback to staff on the documents during biannual meetings and through subsequent correspondence. The advisors are all experts in different fields, with the majority being current or retired 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. Staff also invites other technical experts to review the Annual Report and Plan Update. Through this effort, staff is confident there is no duplication of technology projects represented in the Plan Update, as required in the H&SC.

These actions are to also receive and file membership changes to the TAAG and approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group, as required by

their respective charters. This package includes a Resolution (Attachment A), proposed new advisory group members including their biographies (Attachment B), and one combined document comprising the TAO Clean Fuels Program 2020 Annual Report and 2021 Plan Update (Attachment C).

Clean Fuels Program Annual Report 2020

The Annual Report covers projects and progress of the Program for Calendar Year (CY) 2020. As discussed earlier, this report addresses all the requirements specified in H&SC 40448.5.1(d). Specifically, this report includes the following required elements:

- A description of the core technologies that the South Coast AQMD considers critical to ensure attainment and/or maintenance of ambient air quality standards and a description of the efforts made to overcome commercialization barriers;
- Staff analysis of the impact of TAO's Clean Fuels Program on the private sector and on research, development and commercialization efforts by major vehicle and energy firms;
- A description of projects funded by the South Coast AQMD, including a list of recipients, key subcontractors (if known), 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 key subcontractors involved in each project, and the amount of money expended or committed 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 2020, the Clean Fuels Program executed 24 new projects or studies and modified 11 continuing contracts, adding additional dollars to sponsor research, development, demonstration and deployment (RD^3) projects and technology assessment and transfer contracts for alternative and clean fuel technologies. The South Coast AQMD contribution to these projects was approximately $4.1 million, with total project costs of $28.9 million, which includes coordinated funding from other governmental agencies, private sector, academia and research institutions. The $4.1 million includes approximately $500,000 recognized into the Clean Fuels Fund as pass-through funds from project partners to facilitate project administration by the Clean Fuels Program. 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 2020.

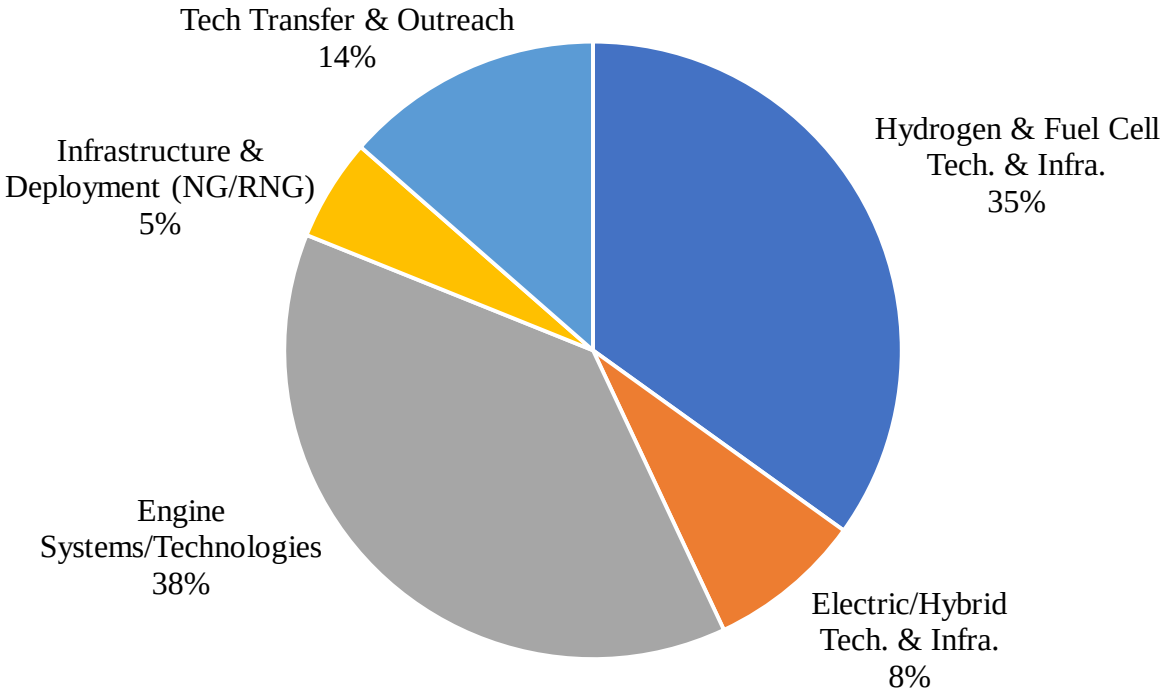


Figure 1: Distribution of Executed Clean Fuels Program Contracts in CY 2020 ($4.1M)

Executed agreements typically follow the 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 Board approval. As such, the funding distribution represents a "snapshot-in-time" of the Clean Fuels Program for the CY being reported.

During CY 2020, the South Coast AQMD supported a variety of projects and technologies, ranging from near-term to long-term RD^3 activities. This "technology portfolio" strategy provides the South Coast AQMD the ability and flexibility to leverage state and federal funding while also addressing the specific needs of the Basin. Projects executed in CY 2020 included demonstrations of zero emission trucks and EV infrastructure, zero emission cargo handling vehicle demonstrations, deployment of pre-commercial battery electric shuttle buses, natural gas engine emissions and efficiency improvements, solid oxide fuel cell and gas turbine hybrid technology development and hydrogen fueling station expansions. Like the last few years, the significant project scopes of a few key contracts executed in the CY resulted in higher than average leveraging of Clean Fuels dollars. Typical leveraging has been $4 for every $1 in Clean Fuels funding. In 2020, leveraging was approximately $1 to $7.

In addition to the new projects, 22 RD^3 and 8 technology assessment and transfer/outreach projects were completed in CY 2020. Summaries of each of the

technical projects completed in 2020 are provided in Appendix C of the combined document.

The Clean Fuels Program in CY 2020 continued to leverage other outside opportunities with the South Coast AQMD securing new awards over $45.8 million from federal, state and local funding. While this revenue may not be recognized into the Clean Fuels Fund, it is part of the overall RD^3 effort implemented under the auspices of the Clean Fuels Program. Staff continues to aggressively pursue applicable funding opportunities that may focus on GHG reductions, energy efficiency and reductions in petroleum usage, while remaining committed to acting as a leader in developing advanced technologies that lower criteria and toxic pollutants. Leveraging dollars and applying for funds is critical given the magnitude of required funding identified in the 2016 AQMP that is needed to achieve federal ozone air quality standards.

Clean Fuels Program Plan Update 2021
Every year, staff re-evaluates the Clean Fuels Program to develop an update of the Plan which essentially serves to re-calibrate the technical direction of the Program. The attached 2021 Plan Update for the Clean Fuels Program identifies potential projects to be considered for funding during 2021 and beyond. The proposed projects reflect promising zero, near-zero and low emission technologies and applications that are emerging in the different source categories. This Plan Update includes several 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 2021 include, but are not limited to:

- Heavy-duty zero emission battery electric and fuel cell trucks and infrastructure;
- Onboard sensor development for emissions monitoring and improved efficiency;
- Microgrid demonstrations to support zero emission infrastructure;
- Battery, fuel cell electric transit and school buses charging/fueling infrastructure;
- Heavy-duty diesel truck replacements with near-zero emissions natural gas trucks;
- Fuel and emissions studies that include measurements and analysis of NOx; and emissions and emissions impacts of hydrogen-natural gas fuel blends on near-zero natural gas engines.

In addition to identifying proposed projects to be considered for funding, this Plan Update confirms nine key technical areas of highest priority to the South Coast AQMD. These high priority areas are listed below based on the proposed funding distribution shown in Figure 2:

- Focus priorities on large demonstrations of zero emissions drayage trucks to test and validate OEM readiness and infrastructure viability;
- Defining technology pathways via special projects - the Ultra-Low Emissions Engine Program;

- Near-zero emission (gaseous and liquid fuel) engine systems, especially high HP uses;
- Expand focus on local biogas production and use;
- Leverage OEM partnerships to focus on continued deployment of hybrid, plug-in, electric-drive technologies and infrastructure;
- Onsite hydrogen production and dispensing and mobile refueling; and
- Maintain other areas of emphasis.

It should be noted that these priorities represent the areas where South Coast AQMD 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 South Coast AQMD 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 South Coast AQMD's Technology Advancement program. The principal revenue source is the Clean Fuels Program which, under H&SC Sections 40448.5 and 40512, and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile and stationary sources to support program 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 other national laboratories, U.S. EPA 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 2016 AQMP control measures as well as CARB's Mobile Source Strategies including the Truck and Bus Regulation and Advanced Clean Truck Regulation, U.S. EPA's Cleaner Trucks Initiative, San Pedro Bay Ports' Clean Air Action Plan, the Sustainable Freight Action Plan, and the California Fuel Cell Partnership's *Medium & Heavy-Duty Fuel Cell Electric Vehicle Action Plan* and *Road Map for Zero Emission, Fuel Cell Electric Buses in California*. 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 held two meetings in September 2020 and February 2021 to solicit input from the SB 98 Clean Fuels Advisory Group, 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. Staff also attended a variety of conferences and symposiums, such as the Hydrogen and Fuel Cells for Freight Workshop in March 2020; ACT Virtual Event Series from August through November 2020; High

Power Charging for Commercial Vehicles Event in September 2020; and Renewable Gas 360 Symposium and Webinar Series starting in June 2020. Additionally, staff attended meetings or workshops with CARB, CEC, the California Fuel Cell Partnership, the California Stationary Fuel Cell Collaborative, California Hydrogen Business Council, Veloz (a nonprofit supporting electric vehicles for all), and other entities to solicit and incorporate technical areas for potential leveraged funding and project coordination.

Based on discussions 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 duplicate any past or present projects. As each individual project is recommended to the 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.

Staff presented the Draft 2021 Clean Fuels Program Plan Update to the Technology Committee on October 16, 2020. Figure 2 graphically depicts the potential distribution of Clean Fuels Program funds which represents priority focus for the nine project areas discussed above.

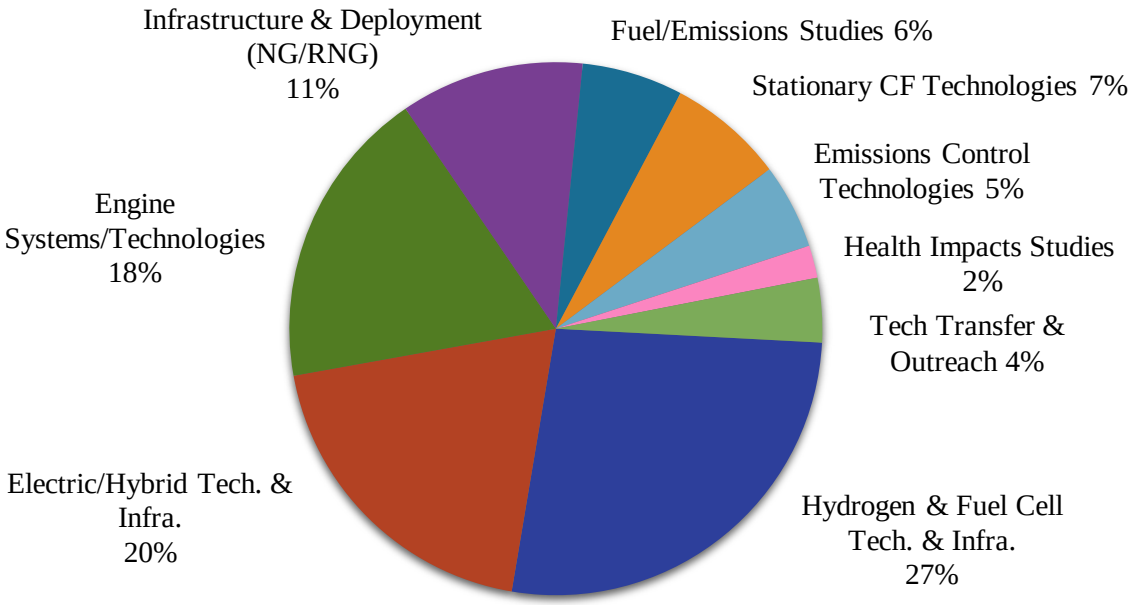


Figure 2: Projected Cost Distribution for Potential Projects in 2021 ($17.9M)

The expected actual program expenditures for 2021 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 Clean Fuels funding. Specific contract awards throughout 2021 will be based on

this proposed allocation, the quality of proposals received and evaluation of projects against standardized criteria and, ultimately, Board 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 2020 and adopt the Clean Fuels Plan Update for 2021 as well as find that the proposed projects do not duplicate programs of other organizations specified in the H&SC provision. As required, the Annual Report and Plan Update have been reviewed by the SB 98 Clean Fuels Advisory Group.

Attachments

A. Resolution
B. Qualifications and Expertise of Proposed New Advisory Group Members
C. TAO Clean Fuels Program 2020 Annual Report and 2021 Plan Update

ATTACHMENT A

RESOLUTION NO. 21-

A Resolution of the Governing Board (the Board) of the South Coast Air Quality Management District (South Coast AQMD) approving the Technology Advancement Office Clean Fuels Program Annual Report for 2020 and adopting the Clean Fuels Program Plan Update for 2021.

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 South Coast AQMD 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 South Coast AQMD 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 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 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; and

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 South Coast AQMD 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 South Coast AQMD, 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 Gas Company, Southern California Edison Company, San Diego Gas and Electric Company, or the Office of Mobile Sources within the U.S. EPA; 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 Board is to consider approving 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 2020.

BE IT FURTHER RESOLVED, that the Board adopts the Technology Advancement Office Clean Fuels Program Plan Update for 2021.

BE IT FURTHER RESOLVED, that the Board hereby directs staff to forward the Technology Advancement Office Clean Fuels Program Annual Report 2020 and Plan Update 2021 to the California Legislature and the Legislative Analyst.

_____ _____

Dated: Faye Thomas, Clerk of the Boards

ATTACHMENT B
Qualifications and Expertise of Proposed New Advisory Group Members

SB 98 Clean Fuels Advisory Group*

Keith Brandis Volvo Group	Keith Brandis is a 30-plus year veteran of the trucking industry with a diverse background in heavy truck manufacturing, engineering, sales and marketing. He began his career with Volvo Trucks in Dublin, Virginia after graduating from Virginia Tech in marketing management. While there, he held various positions in the areas of materials, production and order management. Keith moved to Volvo Trucks' North American headquarters in Greensboro, North Carolina, to become a sales engineer and sales trainer. To further broaden his experience, he sold new and used medium- and heavy-duty trucks at a Volvo Trucks dealership in Roanoke, Virginia, for six years. While in Roanoke, he earned a Master of Business Administration from Averitt University and taught part-time at various technical community colleges. In 2001, Keith returned to Greensboro to head the Volvo Trucks' Marketing department and Business Development. In 2009, Keith served as Vice President for Product Planning for Volvo Trucks North America and Mack Trucks. Currently, Keith works in the Chief Technology Office as the Vice President, Partnerships and Strategic Solutions, for North America. He leads the largest public-private partnership project totaling 90 MUSD known as VOLVO LIGHTS.
Dwight Robinson Mortimer & Wallace, Inc.	Dwight Robinson is an entrepreneur with a primary focus in the logistics sector. For the last 15 years he has owned Mortimer & Wallace, Inc., a drayage trucking company, which operates in the Ports of Long Beach and Los Angeles. Mortimer & Wallace, Inc. operates 23 trucks and employees more than 30 drivers. Dwight also owns and operates Los Angeles Harbor Grain Terminal, Inc., an agricultural logistics business, which employees more than 50 individuals and annually exports more than 25,000 container TEUs of grain and grain by products to Asia and the Middle East. Additionally, Dwight owns and operates a few other companies in the commodity trading and transloading industries. Dwight is also a former City Councilman from Lake Forest, CA. He was first elected in 2012, selected as Mayor in 2014, and was subsequently re-elected to the City Council in 2016. In 2013, Dwight was elected to the Orange County First Authority (OCFA) Board and served until 2017. In 2014, Dwight was elected to the Southern California Association of Governments (SCAG) Transportation Committee and served until 2019. In 2015, Dwight was elected by the Mayors of Orange County to serve on the Governing Board of the South Coast AQMD. Assuming office in 2016 and serving until January 2020, Dwight was an active member of South Coast AQMD's Technology Committee and Ports Committee and also represented South Coast AQMD on the California Natural Gas Vehicle Partnership (CNGVP) board. During his tenure at South Coast AQMD, among the many District accomplishments, Dwight was most proud to have worked closely with South Coast AQMD staff and industry stakeholders to develop, demonstrate, and deploy clean fuel technologies in the transportation sector.

**The charter of the CFAG requires membership changes to be approved by the full SCAQMD Board.*

Technology Advancement Advisory Group**

Laura Renger Southern California Edison	Laura Renger currently serves as the director of Electrification & Customer Services Policy in Southern California Edison's Regulatory Affairs organization. In this position, Laura is responsible for the utility's regulatory and legislative policy concerning transportation electrification, building electrification, climate change, energy efficiency and energy equity. In her previous role, Laura served as director of the Edison International President and CEO's Office supporting matters before the Edison International Managing Committee as well as activities at Edison International and its subsidiaries, Southern California Edison and Edison Energy Group. Laura began her career at Southern California Edison in the Law Department where she focused on air quality, climate change, safety, and transmission project licensing. She also served as the Principal Manager of Air & Climate Policy in SCE's Regulatory Affairs before joining Edison International. Laura holds a B.A. from Occidental College and a J.D. from Columbia Law School.

***The charter of the TAAG requires membership changes to be approved by the Board's Technology Committee.*

ATTACHMENT C
TECHNOLOGY ADVANCEMENT OFFICE
CLEAN FUELS PROGRAM
DRAFT 2020 ANNUAL REPORT
& 2021 PLAN UPDATE

South Coast Air Quality Management District

Governing Board

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

County Representatives
Sheila Kuehl
Supervisor, Los Angeles County

Lisa Bartlett*
Supervisor, Orange County

V. Manuel Perez
Supervisor, Riverside County

Janice Rutherford
Supervisor, San Bernardino County

State Representatives
Gideon Kracov*
Governor's Appointee

Vice Chairman
Ben Benoit
Council Member, City of Wildomar
Cities of Riverside County

Cities Representatives
Joe Buscaino**
Council Member, City of Los Angeles
City of Los Angeles

Michael Cacciotti
Mayor Pro Tem, City of South Pasadena
Los Angeles County, Eastern Region Cities

Vanessa Delgado
Senator (Ret.)
Senate Rules Committee Appointee

Larry McCallon*
Mayor Pro Tem, City of Highland
Cities of San Bernardino County

Rex Richardson
Vice Mayor, City of Long Beach
Los Angeles County, Western Region Cities

Carlos Rodriguez*
Mayor Pro Tem, City of Yorba Linda
Cities of Orange County

Executive Officer
Wayne Nastri

*Technology Committee Members (as of 2/19/21) **Technology Committee Chairman

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South Coast Air Quality Management District

Technology Advancement Office

Matt Miyasato, Ph.D., Chief Technologist & Deputy Executive Officer, Science & Technology Advancement

Naveen Berry, Assistant Deputy Executive Officer, Technology Advancement Office

Joseph Impullitti, Technology Demonstration Manager
Vicki White, Technology Implementation Manager

Al Baez, Program Supervisor
Phil Barroca, Program Supervisor
Ping Gui, Program Supervisor
Seungbum Ha, Ph.D., Program Supervisor
Patricia Kwon, Program Supervisor
Tom Lee, Program Supervisor
Joseph Lopat, Program Supervisor
Lisa Mirisola, Program Supervisor
Walter Shen, Program Supervisor
Mei Wang, Program Supervisor

Bahareh Farahani, Sr. Air Quality Engineer
Vacant, Sr. Staff Specialist
Ash Nikravan, Sr. Staff Specialist
Frances Maes, Staff Specialist

Sam Cao, Ph.D., Air Quality Specialist
Arnold Peneda, Air Quality Specialist
David Chen, Air Quality Specialist
Darren Ha, Air Quality Specialist
Maryam Hajbabaei, Ph.D., Air Quality Specialist
Justin Joe, Air Quality Specialist
Alicia Ibarra Martinez, Air Quality Specialist
Krystle Martinez, Air Quality Specialist
Yuh Jiun Tan, Air Quality Specialist
Greg Ushijima, Air Quality Specialist
Nick Volpone, Air Quality Specialist
Fan Xu, Air Quality Specialist
Alyssa Yan, Air Quality Specialist
Andrew Yoon, Air Quality Specialist

Kenny Heralal, Air Quality Inspector II
Alan Wang, Air Quality Inspector II

Penny Shaw Cedillo, Sr. Administrative Secretary
Alejandra Vega, Sr. Administrative Secretary
Maria Allen, Secretary
Marjorie Eaton, Secretary
Donna Vernon, Secretary

Michelle White, Sr. Public Information Specialist
Christina Kusnandar, Staff Assistant
Tribrina Brown, Contracts Assistant
Jessie Conaway, Contracts Assistant
Deanna Doerr, Contracts Assistant
Liliana Garcia, Contracts Assistant
Mariel Maranan, Contracts Assistant
Genette Martinez, Contracts Assistant
Celina Sanchez, Contracts Assistant
Benigna Taylor, Contracts Assistant
Veronica Tejada, Contracts Assistant
Ana Troccoli, Contracts Assistant

Cynthia Snyder, Sr. Office Assistant
Joy Huffine, Office Assistant

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Table of Contents

Progress and Results in 2020

2021 Plan Update

Program Plan Update for 2021

List of Figures

Lis of Tables

Appendix A

Appendix B

Appendix C

Appendix D

Appendix E

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EXECUTIVE SUMMARY

Introduction

The South Coast Air Quality Management District (South Coast AQMD) 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 the South Coast Air Basin (Basin) as well as 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.

In 1988, SB 2297 (Rosenthal) was signed into law (Chapter 1546). It initially established a "five-year program to increase the use of clean fuels," but subsequent legislation extended and eventually removed the sunset clause for the Program. That legislation also reaffirmed existence of the Technology Advancement Office (TAO) to administer the Clean Fuels Program. The TAO Clean Fuels Program is an integral part of the South Coast AQMD's effort to achieve the significant nitrogen oxides (NOx) ppb reductions called for in the 2016 Air Quality Management Plan (AQMP) because it affords South Coast AQMD the ability to fund research, development, demonstration and accelerated deployment of clean fuels and transformative transportation technologies.

Using funding received through a $1 motor vehicle registration fee, the Clean Fuels Program encourages, fosters and supports clean fuels and transportation technologies, such as hydrogen and fuel cells, advanced natural gas technologies, alternative fuel engines, battery electric vehicles, plug-in hybrid electric vehicles and related fueling infrastructure including renewable fuels. A key strategy of the Program, is its public-private partnerships with private industry, technology developers, academic institutions, research institutions and government agencies. Since 1988, the Clean Fuels Program leveraged nearly $340 million into over $1.5 billion in projects.

As technologies move towards commercialization, such as battery electric trucks, the Clean Fuels Program has been able to partner with large original equipment manufacturers (OEMs), such as Daimler, Volvo and Peterbilt in order to deploy these vehicles in larger numbers. These OEM partnerships allow the Program to leverage their research, product creation, customer relationships, and financial resources needed to move advanced technologies from the laboratories to the field and into customers' hands. The OEMs have the resources and capabilities to design, engineer, test, manufacture, market, distribute and service quality products under brand names that are trusted. This is the type of scale needed in order to achieve the emission reductions needed to meet federal and state ambient air quality.

While South Coast AQMD aggressively seeks to leverage funds, it plays a leadership role in technology development and commercialization, along with its partners, to accelerate the reduction of criteria pollutants. As a result, the TAO Clean Fuels Program has traditionally supported a portfolio of technologies, at different technology readiness levels, to provide a continuum of emission reductions and health benefits over time. This approach provides the greatest flexibility and enhances the region's chances toward achieving the National Ambient Air Quality Standards (NAAQS).

California Health and Safety Code (H&SC) 40448.5(e) calls for the Clean Fuels Program to consider, among other factors, the current and projected economic costs and availability of fuels, cost-effectiveness of emission reductions associated with clean fuels compared with other pollution control alternatives, use of new pollution control technologies in conjunction with traditional fuels as an alternative means of reducing emissions, potential effects on public health, ambient air quality,

visibility within the region, and other factors determined to be relevant by the South Coast AQMD. The Legislature recognized the need for flexibility, allowing focus on a broad range of technology areas, including cleaner fuels, vehicles and infrastructure, which helps the South Coast AQMD continue to make progress toward achieving its clean air goals.

H&SC 40448.5.1 requires the South Coast AQMD to prepare and submit to the Legislative Analyst each year by March 31, 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 projects for the next CY, re-calibrating the technical emphasis of the Program.

Setting the Stage

The overall strategy of TAO's Clean Fuels Program is based, in large part, on emission reduction technology needs identified in the AQMP and the South Coast AQMD Board directives to protect the health of almost 18 million residents (nearly half the population of California) in the Basin. The AQMP, which is updated approximately every four years, is the long-term regional "blueprint" that identifies the fair-share emission reductions from all jurisdictional levels (e.g., federal, state and local). The 2016 AQMP, which was adopted by the South Coast AQMD Board in March 2017, is composed of stationary and mobile source emission reductions from traditional regulatory control measures, incentive-based programs, projected co-benefits from climate change programs, mobile source strategies and other innovative approaches, including indirect source measures and incentive programs, to reduce emissions from federally regulated sources (e.g., aircraft, locomotives and ocean-going vessels). South Coast AQMD recently initiated efforts for updating the AQMP and is coordinating the efforts with the California Air Resources Board's (CARB) draft Mobile Source Strategy.

Ground level ozone (a key component of smog) is created by a chemical reaction between NOx and volatile organic compound (VOC) emissions in sunlight. This is noteworthy because the primary driver for ozone formation in the Basin is NOx emissions, and mobile sources contribute approximately 88 percent of the NOx emissions in this region, as shown in Figure 1. Furthermore, NOx emissions, along with VOC emissions, also lead to the formation of PM2.5 [particulate matter measuring 2.5 microns or less in size, expressed as micrograms per cubic meter ($\mu g/m^3$)], including secondary organic aerosols.

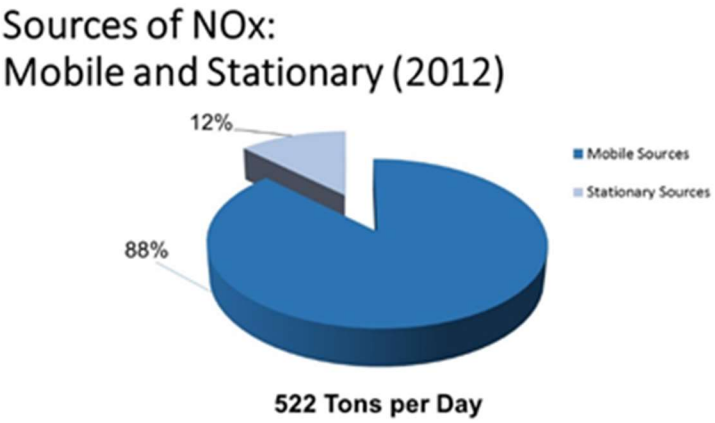
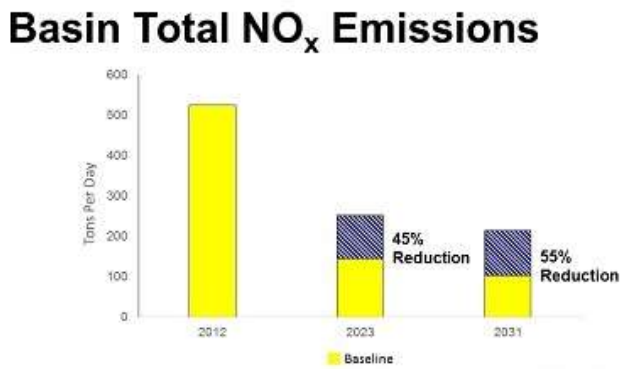


Figure 1: Sources of NOx 2012 Base Year

The emission reductions and control measures in the 2016 AQMP rely on a mix of currently available technologies as well as the expedited development and commercialization of clean fuel mobile and stationary advanced technologies to achieve health-based air quality standards. The 2016 AQMP identifies a 45 percent reduction in NOx required by 2023 and an additional 55 percent reduction by 2031 to achieve ozone standards of 80 parts per billion (ppb) and 75 ppb, respectively. Figure 2 illustrates these needed NOx reductions in the Basin. The majority of these NOx reductions must come from mobile sources, both on-road and off-road. Notably, the South Coast AQMD is currently only one

of two regions in the nation designated as an extreme nonattainment area (the other region is San Joaquin Valley).



8-hour Ozone strategy targeting 2023 will ensure 1-hour attainment in 2022 as well as 24-hour and annual attainment in 2019 and 2025, respectively

Figure 2: Total NOx Reductions Needed

For the first time, the 2016 AQMP identified a means to achieving the NAAQS through regulations and incentives for near-zero and zero emission technologies that are commercial or nearing commercialization. This strategy requires a significantly lower state and national heavy-duty truck engine emissions standard with the earliest feasible implementation date, significant additional financial resources, and accelerated fleet turnover on a massive scale.

Current state efforts in developing regulations for on- and off-road vehicles and equipment are expected to significantly reduce NOx emissions, but are insufficient to meet South Coast AQMD needs, particularly in terms of timing.

Clean Fuels Program

The Clean Fuels Program is a very important mechanism to encourage and accelerate the advancement and commercialization of clean fuel and transportation technologies.

Figure 3 provides a conceptual design of the wide scope of the Clean Fuels Program and the relationship with incentive programs. Various stages of technology projects are funded not only to provide a portfolio of technology choices but to achieve near-term and long-term emission reduction benefits. South Coast AQMD's Clean Fuels Program typically funds projects in the Technology Readiness Level (TRL) ranging between 3-8.

Figure 3: Stages of Clean Fuels Program Funding

Below is a summary of the 2020 Clean Fuels Annual Report and Draft 2021 Plan Update. Every Annual Report and Plan Update is reviewed by two advisory groups--the Clean Fuels Advisory Group, legislatively mandated by SB 98 (chaptered, 1999), and the Technology Advancement Advisory Group, created by the South Coast AQMD Board in 1990. These stakeholder groups review and assess the overall direction of the Program. The two groups meet approximately every six months to provide expert analysis and feedback on potential projects and areas of focus. Key technical experts working in the fields of the Program's core technologies also typically attend and provide feedback. Preliminary

review and comment are also provided by South Coast AQMD's Board and other interested parties and stakeholders, as deemed appropriate.

2020 Annual Report

In CY 2020, the South Coast AQMD Clean Fuels Program executed 24 new contracts, projects or studies and modified 11 continuing project adding dollars toward research, development, demonstration and deployment projects as well as technology assessment and transfer of alternative fuel and clean fuel technologies. Table 1 shows our major funding partners in CY 2020. Table 2 lists the 35 projects or studies, which are further described in this report. The South Coast AQMD Clean Fuels Program contributed nearly $4.1 million in partnership with other governmental organizations, private industry, academia and research institutes, and interested parties, with total project costs of approximately $28.9 million. The $4.1 million includes nearly $500,000 recognized into the Clean Fuels Fund as pass-through funds from project partners to facilitate project administration by the Clean Fuels Program. Table 3 provides information on this outside funding received into the Clean Fuels Fund. Additionally, in CY 2020, the Clean Fuels Program continued to leverage other outside funding opportunities, securing new awards totaling $45.8 million from federal, state and local funding opportunities. Table 4 provides a comprehensive summary of these federal, state and local revenues awarded to the South Coast AQMD during CY 2020. Like the last couple of years, the significant project scope of a few key contracts executed in 2020 resulted in higher than average leveraging of Clean Fuels dollars. Typical historical leveraging is $4 for every $1 in Clean Fuels funding. In 2020, South Coast AQMD continued this upward trend with nearly $7 leveraged for every $1 in Clean Fuels funds. Leveraging dollars and aggressively pursuing funding opportunities is critical given the magnitude of needed funding identified in the 2016 AQMP to achieve federal ozone air quality standards.

The projects or studies executed in 2020 included a diverse mix of advanced technologies. The following core areas of technology advancement for 2020 executed contracts (in order of funding percentage) include:

1. Engine Systems/Technologies (emphasizing alternative and renewable fuels for truck and rail applications);
2. Hydrogen and Mobile Fuel Cell Technologies and Infrastructure;
3. Technology Assessment and Transfer/Outreach;
4. Electric and Hybrid Vehicle Technologies and Related Infrastructure (emphasizing electric and hybrid electric trucks developed by OEMs and container transport technologies with zero emission operations); and
5. Fueling Infrastructure and Deployment (natural gas (NG)/ renewable natural gas (RNG))

The chart on page 27 shows the distribution by percentage of executed agreements in 2020 across these core technologies.

During CY 2020, the South Coast AQMD 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 South Coast AQMD the ability and flexibility to leverage state and federal funding while also addressing the specific needs of the Basin. Projects included significant electric and hybrid electric technologies and infrastructure to develop and demonstrate medium- and heavy-duty vehicles in support of transitioning to a near-zero and zero emissions goods movement industry; development, demonstration and deployment of large displacement natural gas and ultra-low emissions engines; and demonstration of emissions control technologies for heavy-duty engines; and natural gas and renewable natural gas deployment and support.

In addition to the 35 executed contracts and projects, 22 research, development, demonstration and deployment projects or studies and 8 technology assessment and transfer contracts were completed in 2020, as listed in Table 6. Appendix C includes two-page summaries of the technical projects completed in 2020. As of January 1, 2021, there were 106 open contracts in the Clean Fuels Program; Appendix B lists these open contracts by core technology.

In accordance with California H&SC Section 40448.5.1(d), this annual report must be submitted to the state legislature by March 31, 2021, after approval by the South Coast AQMD Board.

2021 Plan Update

Staff's re-evaluation of the Clean Fuels Program to develop the annual Plan Update is based on a reassessment of the technology progress and direction for the agency. The Program continually seeks to support the development and deployment of cost effective clean fuel technologies with increased collaboration with OEMs to achieve large scale deployment. The design and implementation of the Clean Fuels Program Plan must balance the needs in the various technology sectors with technology readiness on the path to commercialization, emission reduction potential and cofunding opportunities. For several years, the state has focused a great deal of attention on climate change and petroleum reduction goals, but the South Coast AQMD has remained committed to developing, demonstrating and commercializing technologies that reduce criteria pollutants, specifically NOx and toxic air contaminants (TACs). Most of these technologies address the Basin's need for NOx and TAC reductions and also garner reductions in greenhouse gases (GHG) and petroleum use. Due to these co-benefits, South Coast AQMD has been successful in partnering with the state and public/private partnerships to leverage its Clean Fuels funding extensively.

To identify technology and project opportunities where funding can make a significant difference in deploying cleaner technologies in the Basin, the South Coast AQMD engages in outreach and networking efforts. These activities range from close involvement with state and federal collaboratives, partnerships and industrial coalitions, to the issuance of Program Opportunity Notices (PONs) to solicit project ideas and concepts and Requests for Information (RFIs) to determine the current state of various technologies and their development and commercialization challenges. Additionally, unsolicited proposals from OEMs and other clean fuel technology developers are regularly received and reviewed. Potential development, demonstration and certification projects resulting from these outreach and networking efforts are included conceptually within the Draft 2021 Plan Update. Due to Assembly Bill (AB) 617[1], which requires reduced exposure to communities most impacted by air pollution, TAO conducted additional outreach to AB 617 communities regarding available zero and near-zero emission technologies and incentives to accelerate cleaner technologies. Cleaner technologies such as zero emission heavy-duty trucks are now included in the Community Emission Reduction Plans (CERPs) for these AB 617 communities. CARB adopted two critical milestone regulations for reducing emissions from heavy-duty mobile sources in 2020, the Advanced Clean Truck (ACT) regulation which mandates percent zero emission truck (ZET) sales starting in 2024 and the Omnibus Low NOx regulation which requires lower NOx standard heavy-duty engines starting in 2022. Despite these two major efforts, the expected NOx reduction will still fall short of the 2023 and 2031 attainment target.

The Plan Update includes projects to develop, demonstrate and commercialize a variety of technologies, from near-term to long-term commercialization, that are intended to provide emission reductions identified in the 2016 AQMP. Given the need for significant reductions over the next five to ten years, near-zero and zero emission technologies are emphasized. Areas of focus include:

[1] https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/about

- reducing emissions from port-related activities, such as cargo handling and container movement, and other technologies, including demonstration and deployment of zero emission drayage trucks;
- developing and demonstrating ultra-low NOx, gaseous and liquid renewable fueled, large displacement/high efficiency engines and zero emission heavy-duty vehicles;
- developing, demonstrating and deploying advanced natural gas and propone engines as well as near-zero and zero emission technologies for high horsepower applications;
- mitigating criteria pollutant emissions from renewable fuels, such as renewable natural gas, diesel and hydrogen as well as other renewable fuels and waste streams;
- producing transportation fuels and energy from renewable and waste stream sources;
- developing and demonstrating electric-drive (fuel cell, battery, plug-in hybrid and non-plug-in hybrid) technologies across light-, medium- and heavy-duty platforms;
- establishing large-scale hydrogen refueling and EV charging infrastructure to support light-, medium- and heavy-duty zero emission vehicles; and
- developing and demonstrating advanced zero emission microgrids for energy storage and demand to support transportation electrification, goods movement, and freight handling activities.

Table 6 lists potential projects across nine core technologies by funding priority:

1. Hydrogen/Mobile Fuel Cell Technologies and Infrastructure (especially large-scale refueling and production facilities) and stations that support medium and heavy-duty vehicles;
2. Engine Systems/Technologies (emphasizing alternative and renewable fuels for truck and rail applications);
2. Electric/Hybrid Vehicle Technologies and Infrastructure (emphasizing electric and hybrid electric trucks and container transport technologies with zero emission operations);
4. Fueling Infrastructure and Deployment (predominantly renewable natural gas and renewable fuels);
5. Stationary Clean Fuel Technologies (including microgrids that support electric vehicle (EV) and Hydrogen infrastructure and renewables);
6. Fuel and Emission Studies;
7. Emission Control Technologies that support low emitting diesel engines;
8. Health Impact Studies within disadvantaged communities; and
9. Technology Transfer/Assessment and Outreach.

These potential projects for 2021 total $17.9 million, with anticipated leveraging of more than $4 for every $1 of Clean Fuels funding for total project costs of $120 million. Some of the proposed projects may also be funded by revenue sources other than the Clean Fuels Program, through state and federal grants for clean fuel technologies, incentive programs such as AB 617 Community Air Protection (CAP) funding, Volkswagen Mitigation and Carl Moyer, and VOC and NOx mitigation.

CLEAN FUELS PROGRAM
Background and Overview

Program Background

The 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. This region, which encompasses the South Coast Air Basin as well as small portions of the Mojave Desert and Salton Sea Air Basins, is home to almost 18 million residents (nearly half the population of California). Due to this confluence of factors, which present unique challenges, the state legislature enabled the South Coast AQMD to implement the Clean Fuels Program to accelerate the implementation and commercialization of clean fuels and advanced mobile source technologies.

In 1988, SB 2297 (Rosenthal) was signed into law (Chapter 1546). It initially established a "five-year program to increase the use of clean fuels," but subsequent legislation extended and eventually removed the sunset clause for the Program. That legislation also reaffirmed existence of the Technology Advancement Office (TAO) to administer the Clean Fuels Program. The TAO Clean Fuels Program is an integral part of the South Coast AQMD's effort to achieve the significant NOx reductions called for in the 2016 AQMP.

California H&SC section 40448.5(e) calls for the Clean Fuels Program to consider, among other factors, the current and projected economic costs and availability of fuels, the cost-effectiveness of emission reductions associated with clean fuels compared with other pollution control alternatives, the use of new pollution control technologies in conjunction with traditional fuels as an alternative means of reducing emissions, potential effects on public health, ambient air quality, visibility within the region, and other factors determined to be relevant by the South Coast AQMD. The Legislature recognized the need for flexibility, allowing focus on a broad range of technology areas, including cleaner fuels, vehicles and infrastructure, which helps the South Coast AQMD continue to make progress toward achieving its clean air goals.

In 1999, further state legislation was passed which amended the Clean Fuels Program. Specifically, as stated in the H&SC section 40448.5.1(d), the South Coast AQMD 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 South Coast AQMD 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 South Coast AQMD'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 South Coast AQMD;
3. A description of projects funded by the South Coast AQMD, 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 South Coast AQMD 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. Concurrent with adoption and approval of the annual report and plan update every year, the Board will consider the efforts TAO has undertaken in the prior year to ensure no such duplication has occurred then make a finding through a Resolution attesting such.

The following section describes the various panels of external experts that help review the Clean Fuels Program every year.

Program Review

In 1990, the South Coast AQMD initiated an annual review of its technology advancement program by an external panel of experts. That external review process has evolved, in response to South Coast AQMD policies and legislative mandates, into two external advisory groups. The Technology Advancement Advisory Group (one of six standing Advisory Groups that make up the South Coast AQMD 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 South Coast AQMD 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 consulting with regarding approval of the required annual report prior for submittal to the South Coast AQMD Governing Board. Also, in 1999, considering the formation of the SB 98 Clean Fuels Advisory Group, the South Coast AQMD 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 South Coast AQMD Board while changes to the Technology Advancement Advisory Group are reviewed by the South Coast AQMD Board's Technology Committee.

The charter for the Technology Advancement Advisory Group calls for approximately 12 technical experts representing industry, academia, state agencies, the scientific community and environmental interests. Traditionally, there has been exactly 12 members on this advisory group, but this year staff is recommending to the Board's Technology Committee that it add representatives from the Ports of Long Beach and Los Angeles, as both entities have been integral players and stakeholders in demonstrating near-zero and zero emissions technologies in and around the ports and surrounding environmental justice communities.

As needed, current membership changes to both advisory groups are considered by the South Coast AQMD Board and its Technology Committee, respectively, as part of consideration of each year's Annual Report and Plan Update. The current members of the SB 98 Clean Fuels Advisory Group and Technology Advancement Advisory Group (as of 2/19/21) are listed in Appendix A, with proposed changes, duly noted, subject to either South Coast AQMD Board approval or the Board's Technology Committee, per the advisory group's charters.

The review process of the Clean Fuels Program now includes, at minimum: 1) two full-day retreats of the both Advisory Groups, typically in the summer and winter; 2) review by other technical experts; 3) occasional technology forums or roundtables bringing together interested parties to discuss specific technology areas; 4) review by the Technology Committee of the South Coast AQMD Board; 5) a public hearing of the Annual Report and Plan Update before the full South Coast AQMD Board, along with adoption of the 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 6) finally submittal of the Clean Fuels Program Annual Report and Plan Update to the Legislature by March 31 of every year.

The Need for Advanced Technologies & Cleaner 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.

Ground level ozone (a key component of smog) is created by a chemical reaction between NOx and volatile organic compound (VOC) emissions in sunlight. This is noteworthy because the primary driver for ozone formation in the Basin is NOx emissions, and mobile sources contribute approximately 88 percent of the NOx emissions in this region, as shown in Figure 1. Furthermore, NOx emissions, along with VOC emissions, also lead to the formation of PM2.5 [particulate matter measuring 2.5 microns or less in size, expressed as micrograms per cubic meter (µg/m3)], including secondary organic aerosols.

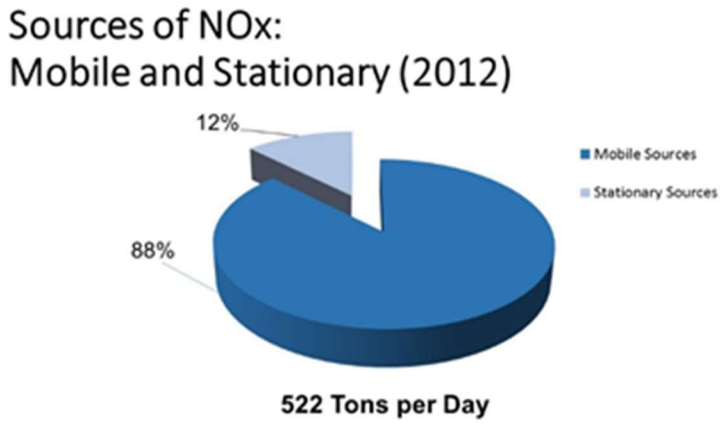
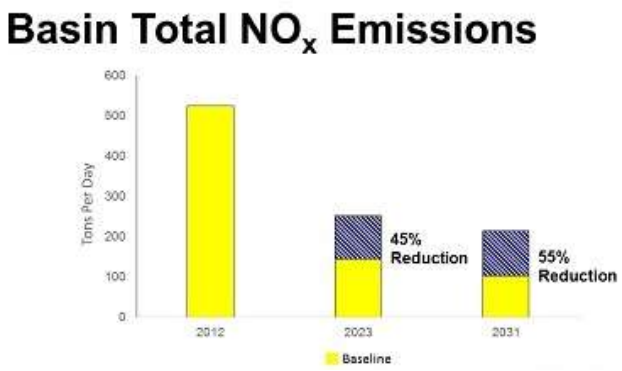


Figure 1: Sources of NOx 2012 Base Year

To fulfill near -and long-term emissions reduction targets, the 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 (70 ppb, 8-hour average) and fine particulate matter, promulgated by the U.S. Environmental Protection Agency (U.S. EPA), are projected to require additional long-term control measures for both NOx and VOC.

The need for advanced mobile source technologies and clean fuels is best illustrated by Figure 2 which



8-hour Ozone strategy targeting 2023 will ensure 1-hour attainment in 2022 as well as 24-hour and annual attainment in 2019 and 2025, respectively

Figure 2: Total NOx Reductions Needed

identifies just how far NOx emissions must be reduced to meet federal standards by 2023 and 2031. The 2016 AQMP's estimate of needed NOx reductions will require the South Coast AQMD Clean Fuels Program to encourage and accelerate advancement of clean transportation technologies that are used as control strategies in the AQMP. Given this contribution, significant cuts in pollution from these sources are needed, therefore proposed AQMP mobile source strategies call for establishing requirements for cleaner technologies (both zero and near-zero) and deploying these technologies into fleets, requiring cleaner and renewable fuels, and ensuring continued clean performance in use. Current state efforts in developing regulations for on- and off-road vehicles and equipment are expected to reduce NOx emissions significantly, but not sufficiently to meet the South Coast AQMD needs, especially in terms of timing.

Health studies also indicate a greater need to reduce NOx emissions and toxic air contaminant emissions. For example, the goal of South Coast AQMD's Multiple Air Toxics Exposure Study (MATES) IV, completed in 2015, 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 late 2017, South Coast AQMD initiated MATES V to update the emissions inventory of toxic air contaminants and modeling to characterize risks, including measurements and analysis of ultrafine particle concentrations from major roadways and the regional carcinogenic risk from exposure of air toxics. The MATES V report is expected to be finalized by the end of 2021.

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 South Coast AQMD's jurisdiction, reduce long-term dependence on petroleum-based fuels, and support a more sustainable energy future. Conventional strategies and traditional supply and consumption need to be retooled to achieve the federal air quality goals. To help meet this need for advanced, clean technologies, the South Coast AQMD Board continues to aggressively carry out the Clean Fuels Program and promote alternative fuels through its Technology Advancement Office (TAO).

As technologies move towards commercialization, such as battery electric and fuel cell trucks, the Clean Fuels Program has been able to partner with large original equipment manufacturers (OEMs), such as Daimler, Volvo and Kenworth, in order to eventually deploy these vehicles in increasingly large numbers. These partnerships with the OEMs allow the Program to leverage the research, product creation and financial resources that are needed to move advanced technologies from the laboratories, to the field and eventually into customers' hands. The OEMs have the resources and abilities to design, engineer, test, manufacture, market, distribute and service quality products under brand names that are trusted. To obtain the emission reductions needed to meet federal and state ambient air quality

standards, large numbers of advanced technology clean-fueled vehicles must be deployed across our region and state.

Once advanced technologies and cleaner fuels are commercial-ready, there needs to be a concerted effort to get them into the marketplace and ono the roads. The South Coast AQMD's Carl Moyer Program, which was launched in 1988, helps achieve these results. The two programs produce a unique synergy, with the Carl Moyer Program (and other incentive programs, such as Proposition 1B-Goods Movement and the Community Air Protection Program[2]) providing incentives to push market penetration of the technologies developed and demonstrated by the Clean Fuels Program. This synergy enables the South Coast AQMD to play a leadership role in both technology development and commercialization efforts targeting reduction of criteria pollutants. Funding for both research, development, demonstration and deployment (RD[3)] projects as well as incentives remains a concern given the magnitude of additional funding identified in the 2016 AQMP to achieve federal ozone air quality standards.

The following sections describe program funding, provide a 2020 overview and describe core technologies of the Clean Fuels Program.

Program Funding

The Clean Fuels Program is established under 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.

Specifically, the Clean Fuels Program is funded through a $1 fee on motor vehicles registered in the South Coast AQMD. 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 South Coast AQMD. This revenue is typically about $13.5 million and $350,000, respectively, every year. For CY 2020, the funds available through each of these mechanisms were as follows:

- Mobile sources (DMV revenues) $13,258,888
- Stationary sources (emission fee surcharge) $356,174

The South Coast AQMD Clean Fuels Program also receives grants and cost-sharing revenue contracts from various agencies, on a project-specific basis, that supplement the South Coast AQMD program. Historically, such cooperative project funding revenues have been received from CARB, the California Energy Commission (CEC), the U.S. EPA (including but not limited to their Diesel Emissions Reduction Act or DERA, the Clean Air Technology Initiative or CATI, and Airshed programs), 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 3 lists the supplemental grants and revenues totaling almost $500,000 for contracts executed in CY 2020.

Table 4 lists the federal, state and other revenue totaling $45.8 million awarded to the South Coast AQMD in 2020 for projects that are part of the overall Clean Fuels Program's RD[3] efforts, even if for

[2] http://www.aqmd.gov/home/programs/business/business-detail?title=vehicle-engine-upgrades

financial tracking purposes the revenue is recognized into another special revenue fund other than the Clean Fuels Fund (Fund 31).

The final and perhaps most significant funding source can best be described as an indirect source, i.e., funding not directly received by the South Coast AQMD. This indirect source is the cost-sharing provided by private industry and other public and private organizations. In fact, these public-private partnerships with private industry, technology developers, academic institutions, research institutions and government agencies are a key strategy of the Clean Fuels Program. Historically, the Technology Advancement Office has been successful in leveraging its available public funds with $4 of outside funding for each $1 of South Coast AQMD funding. Since 1988, the Clean Fuels Program has leveraged nearly $343 million into more than $1.55 billion in projects. For 2020, the Clean Fuels Program leveraged each $1 to nearly $7 of outside funding. Similar to last year, this atypical leverage was the result of a few key significant project awards in 2020, such as the $31.5 million project with Volvo, which includes a nearly $20 million award to the South Coast AQMD from US EPA TAG grant. Through these public-private partnerships, the South Coast AQMD 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 South Coast AQMD aggressively seeks to leverage funds, it continues to act in a leadership role in technology development and commercialization efforts, along with its partners, to accelerate the reduction of criteria pollutants. Leveraging dollars and aggressively applying for additional funds whenever funding opportunities arise is more important than ever given, as previously noted, the magnitude of additional funding identified in the 2016 AQMP to achieve federal ozone air quality standards. The South Coast AQMD'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 2020 are listed in Table 1.

2020 Overview

This report summarizes the progress of the South Coast AQMD Clean Fuels Program for CY 2020. The South Coast AQMD Clean Fuels Program cost-shares projects to develop and demonstrate zero, near-zero and low emissions clean fuels and advanced technologies to push the state-of-the-technology and promote commercialization and deployment of promising or proven technologies not only for the Basin but Southern California and the nation as well. As noted, 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 South Coast AQMD Clean Fuels Program in CY 2020. During the period between January 1 and December 31, 2020, the South Coast AQMD executed 24 new contracts/agreements, projects or studies and modified 11 continuing project adding dollars during CY 2020 that support clean fuels and advanced zero, near-zero and low emission technologies (see Table 2). The South Coast AQMD Clean Fuels Program contribution for these projects was $4.1 million, inclusive of approximately $500,000 received into the Clean Fuels Fund as cost-share for contracts executed in this reporting period. Total project costs are $28.9 million. The Clean Fuels contribution, total project costs and number of contracts executed in 2020 have been less than previous years largely due the effects of the COVID pandemic that impacted many of our partners business operations. Due to government lockdowns many projects have been delayed or canceled and future projects put on hold. We look forward to 2021 for a resurgence in business activity, more completed projects and newly executed projects.

The projects executed in 2020 address a wide range of issues with a diverse technology mix including near-term emissions reductions and long-term planning efforts. 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 3), but also funds awarded to the South Coast AQMD for projects that fall within the scope of the Clean Fuels Program's RD^3 efforts but may have been recognized (received) into another special revenue fund for financial tracking purposes (nearly $45.8 million in 2020, see Table 4). For example, in 2020, the South Coast AQMD was awarded nearly $37 million by USEPA as project partners with Volvo on their electric drayage truck Switch-On Project ($20M), Sunline Transit for fuel cell electric buses ($6M) and MAN Energy Solutions for an SCR retrofit of an ocean going vessel ($11M) with total project costs of over $50million. These projects will advance the commercialization of electric trucks, fuel cell buses and ocean going vessels emission reduction technology. More details on this financial summary can be found later in this report. The South Coast AQMD will continue to pursue federal, state and private funding opportunities in 2021 to amplify leverage, while acknowledging that support of a promising technology is not contingent on outside cost-sharing and affirming that South Coast AQMD will remain committed to playing a leadership role 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 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:

- Hydrogen/Mobile Fuel Cell Technologies and Infrastructure support with a focus on medium and heavy duty vehicles (especially large-scale refueling facilities);
- Engine Systems/Technologies (emphasizing alternative and renewable fuels for truck and rail applications);
- Electric/Hybrid Vehicle Technologies and Related Infrastructure (emphasizing electric and hybrid electric trucks and container transport technologies with zero emission operation);
- Fueling Infrastructure and Deployment (predominantly natural gas and renewable fuels);
- Stationary Clean Fuels Technologies (including microgrids and renewables);
- Fuel and Emissions Studies;
- Emissions Control Technologies;
- Health Impacts Studies; and
- Technology Assessment and Transfer/Outreach.

At its January 2020 retreat, the Technology Advancement and SB-98 Clean Fuels Advisory Groups asked staff to take another look at these core technologies to determine if they still fit within the strategy of the Clean Fuels Program. That effort will be undertaken in 2020.

The South Coast AQMD continually seeks to support the deployment of lower-emitting technologies. The Clean Fuels Program is shaped by two basic factors:

1. Zero, near-zero and low 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 South Coast AQMD 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 South Coast AQMD program is significant, national and international activities affect the direction of technology trends. As a result, the South Coast AQMD program must

be flexible to leverage and accommodate these changes in state, national and international priorities. Nonetheless, while the state and federal governments have continued to turn a great deal of their attention to climate change, South Coast AQMD 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 South Coast AQMD has been successful in partnering with the state and federal government. Even with the leveraged funds, the challenge for the South Coast AQMD remains the need to identify project or technology opportunities in which its available funding can make a difference in achieving progressively cleaner air in the Basin.

To achieve this, the South Coast AQMD employs various outreach and networking activities as well as evaluates new ways to expand these activities. These activities range from close involvement with state and federal collaboratives, partnerships and industrial coalitions, to the issuance of Program Opportunity Notices (PONs) to solicit project ideas and concepts as well as the issuance of Requests for Information to determine the state of various technologies and the development and commercialization challenges faced by those technologies. Additionally, in the absence of PONs, unsolicited proposals from OEMs and other clean fuel technology developers are accepted and reviewed.

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 powertrains 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 and waste energy systems. The focus in recent years has been on zero and near-zero emission technologies with increased attention to heavy- and medium-duty trucks 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. The South Coast AQMD is exploring opportunities to expand its authority in ways that would allow the agency to do more to foster technology development for ship and train activities as well as locomotives as they relate to goods movement. In the absence of regulatory authority, the South Coast AQMD is expanding its portfolio of RD^3 projects to include marine and ocean-going vessels. Utilizing mitigation funds, funding from San Pedro Bay ports and industry partners, RD^3 projects to demonstrate emissions reduction technology in the marine sector where NOx emissions are increasing are being pursued.

The 2016 AQMP included five Facility-Based Mobile Source Measures, also known as indirect source measures. Since then, staff has been developing both voluntary and regulatory measures in a process that has included extensive public input. Indirect source measures are distinct from traditional air pollution control regulations in that they focus on reducing emissions from the vehicles associated with a facility rather than emissions from a facility itself.

For example, indirect source measures for warehouses could focus on reducing emissions from trucks servicing the facility. Measures for ports will concentrate on emissions from ships, trucks, locomotives and cargo handling equipment at the ports. Measures covering new development and redevelopment projects could aim to reduce emissions from construction equipment, particularly heavy-duty diesel earth-moving vehicles.

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 cost-sharing partners, and consistency with program goals and funding constraints. The core technologies for the South Coast AQMD programs that meet both the funding constraints and 2016 AQMP needs for achieving clean air are briefly described below.

Hydrogen/Mobile Fuel Cell Technologies and Infrastructure

Toyota and Hyundai commercialized light-duty fuel cell vehicles in 2015. Honda started delivering their Fuel Cell Clarity in 2016, and others have plans to commercialize their own soon. As automakers continue to collaborate on development efforts (e.g., Honda and GM) and commercialize fuel cell vehicles, in the interim plug-in hybrid technology could help enable fuel cells by using larger capacity batteries until fuel cell components mature. For example, Mercedes-Benz announced limited production of a plug-in fuel cell model GLC for 2018 in Germany, with U.S. availability to follow. However, the greatest challenge for the viability of fuel cell vehicles 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 65 stations funded by CEC and CARB by the end of 2019, partially funded by South Coast AQMD for those in our region, there is one legacy and 39 retail operational in California, but most if not all 65 are expected to be operational by the end of 2020 with capacity for more than 10,000 fuel cell vehicles. AB 8 also requires CARB to annually assess current and future fuel cell vehicles (FCVs) and hydrogen stations in the marketplace. *The Joint Agency Staff Report on Assembly Bill 8: 2019 Annual Assessment of Time and Cost Needed to Attain 100 Hydrogen Refueling Stations in California*[3] released in December 2019 covering 2019 findings states that there were 6,826 fuel cell vehicles registered in California by October 2019. However, CARB's 2017 Annual Evaluation projects 13,400 fuel cell electric vehicles (FCEVs) in California by 2020 and 37,400 by the end of 2023. Additionally, the California Fuel Cell Partnership's (CaFCP) *The California Fuel Cell Revolution, A Vision For Advancing Economic, Social, and Environmental Priorities* (Vision 2030) includes the need for up to 1,000 refueling stations statewide as well as the need to expand the market with heavy-duty technologies and their infrastructure.

Clearly, the South Coast AQMD must continue to support infrastructure required to refuel retail fuel cell vehicles and the nexus to medium- and heavy-duty trucks including reducing the cost to deploy heavy-duty hydrogen infrastructure. To that end, South Coast AQMD has cofunded a liquid hydrogen station capable of fueling up to 50 fuel cell transit buses and 10 fuel cell transit buses at OCTA. South Coast AQMD Clean Fuels funding of $500,000 has been committed towards the CARB Zero and Near Zero-Emission Freight Facilities (ZANZEFF) Shore-to-Shore project to deploy 10 heavy-duty fuel cell trucks and install three heavy-duty hydrogen stations in Wilmington and Ontario; this contract will be executed in 2020. South Coast AQMD is also actively engaged in finding alternatives to reduce the cost of hydrogen (e.g., large-scale hydrogen refueling stations or production facilities) and potential longer-term fuel cell power plant technology. South Coast AQMD is also administering the DOE-funded Zero Emission Cargo Transport (ZECT) project (phase 2 or ZECT 2), to develop and deploy six heavy-duty fuel cell drayage trucks. Two of the fuel cell drayage trucks are manufactured by Transportation Power Inc. (TransPower), two fuel cell trucks by US Hybrid, one fuel cell truck by Kenworth, and one fuel cell truck by Hydrogenics (a Cummins Inc. company). Six of the seven vehicle designs, and integration, are completed, and four of the fuel cell drayage trucks are in demonstration. The battery and fuel cell dominant fuel cell trucks have a range of 150-200 miles.

[3] https://ww2.energy.ca.gov/2019publications/...2019.../CEC-600-2019-039. pdf

Engine Systems/Technologies

Medium- and heavy-duty on-road vehicles contributed approximately 33 percent of the Basin's NOx based on 2016 AQMP data. More importantly, on-road heavy-duty diesel trucks account for 33 percent of the on-road mobile source PM2.5, a known toxic air contaminant (TAC). Furthermore, according to CARB, trucks and buses are responsible for 37 percent of California's greenhouse gases (GHGs) and criteria emissions. 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. Even with the announced rollout of zero emission trucks beginning in 2021 by Volvo and Daimler, it is anticipated that it would take ten years for a large enough deployment of those trucks to have an impact on air quality.

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 South Coast AQMD, 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 natural gas or hydrogen, renewable diesel and potentially other renewable or waste stream fuels, for applications in heavy-duty trucks, transit and school buses, rail operations, and refuse collection and delivery vehicles to meet future federal emission standards. South Coast AQMD is supporting three contracts to convert the model year 2021 new Ford medium-duty gasoline engine to near-zero NOx level by using natural gas and propane.

In connection with the challenge to develop cleaner engine systems, on June 3, 2016, South Coast AQMD petitioned the U.S. EPA to initiate rulemaking for a lower NOx national standard for heavy-duty engines. The U.S. EPA has since acknowledged a need for additional NOx reductions through a harmonized and comprehensive national NOx reduction program for heavy-duty on-highway engines and vehicles. U.S. EPA announced the Cleaner Truck Initiative on November 13, 2018, and Advance Notice of Proposed Rule on January 6, 2020, to reduce NOx emissions from on-road heavy-duty trucks starting as early as model year 2026. CARB forged ahead, announcing its own Low NOx Omnibus rule, which may be before the CARB Board as early as Spring 2020, proposing a lower NOx standard starting model year 2024. Although both announcements are welcome news, the timing is too late to help the South Coast AQMD meet its 2023 federal attainment deadline. So, despite progress, commercialization and deployment of near-zero engines are still needed.

Electric/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 light-duty passenger vehicles and more recently plug-in electric vehicles (PEVs) by almost all major automakers and increased public attention on global warming, as well as several Executive Orders issued by Former Governor Brown, such as his January 26, 2018 order, calling for 5 million ZEVs by 2030.

EV adoption continues to increase in 2017, selling more than 655,000 cumulative electric vehicles by September 2019 in California, according to Veloz (formerly the PEV Collaborative), with increasingly more announcements by international automakers (e.g., Mercedes-Benz, Volkswagen-Audi-Porsche, Hyundai/Kia, Ford, GM and several growing Chinese brands) on a variety of electrification plans, including some with extended zero emissions range. Joining the trend with longer-range battery electric light-duty passenger vehicles by Tesla, Chevy and several others, multiple manufacturers have announced light-duty electric truck development.

However, technology transfer to the medium- and heavy-duty applications is just beginning, especially in goods movement demonstrations in this region. As with hydrogen and fuel cell technologies, South

Coast AQMD is actively pursuing research, development and demonstration projects for medium- and heavy-duty battery electric vehicles and their commercialization. South Coast AQMD is administering the DOE funded ZECT project to develop and demonstrate battery electric and plug-in hybrid drayage trucks: four battery electric trucks from TransPower, two battery electric trucks from US Hybrid, two series plug-in hybrid electric trucks from TransPower, and three parallel plug-in hybrid electric trucks from US Hybrid. Battery electric trucks have an all-electric range of up to 100 miles and plug-in hybrid electric trucks have a range of up to 250 miles. This first ZECT project (ZECT 1), which was completed in 2020, gave birth to many other EV and hybrid truck projects including the Greenhouse Gas Reduction Fund (GGRF) Zero Emission Drayage Truck (ZEDT) project demonstrating more than 40 electric and hybrid drayage trucks across California. In the ZEDT project, TransPower continued their development of their electric truck platform with their OEM partner Peterbilt. In addition, Clean Fuels has cofunded the Daimler and Volvo battery electric trucks. Daimler has deployed 14 Class 8 eCascadia and three Class 6 eM2 trucks in 2019 and installed seven DC fast charging stations at fleet locations. Volvo has deployed two Class 8 rigid trucks and three Class 8 60,000-pound tractors and installed two 50 kW DC fast charging stations at its TEC Fontana dealership in December 2019.

Lastly, the same electric and hybrid technology transfer is beginning to appear on off-road and marine applications. South Coast AQMD is currently in the process of demonstrating a battery electric excavator and wheel loader with Volvo Construction Equipment as part of a FY 18 U.S. EPA Targeted Airshed Grant award. At the same time, a new electric drive, diesel hybrid tugboat is in the process of construction and demonstration by fleet operator Centerline Logistics Cooperation with cofunding from Port of Long Beach and CARB. These pilot demonstration projects are key to additional emission reductions from the off-road construction and marine sectors.

Fueling Infrastructure and Deployment (Natural Gas/Renewable Fuels)

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. While California appears to be on track to meet its Renewable Portfolio Standard targets of 33 percent by 2020 and 50 percent by 2030 as required by SB 350 (chaptered October 2015), the objectives of the South Coast AQMD 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 (NG) and renewable natural gas (RNG) infrastructure and deployment (electric and hydrogen fueling are included in their respective technology categories). The Clean Fuels Program will continue to examine opportunities where current incentive funding is either absent or insufficient.

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 zero and near zero-emission technologies, such as solar, energy storage, 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 as well as microgrids

and some renewables. 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.

Although stationary source NOx emissions are small compared to mobile sources in the Basin, there are applications where cleaner fuel technologies or processes can be applied to reduce NOx, VOC and PM emissions. Recent demonstration projects funded in part by the South Coast AQMD include a local sanitation district 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 carbon monoxide (CO) emissions. This project demonstrated that cleaner, more robust renewable distributed generation technologies exist that not only improve air quality but enhance power quality and reduce electricity distribution congestion. Another ongoing demonstration project consists of retrofitting a low NOx ceramic burner on an oil heater without the use of reagents, such as ammonia nor urea, which is anticipated to achieve selective catalytic reduction (SCR) NOx emissions or lower. SCR requires the injection of ammonia or urea that is reacted over a catalyst bed to reduce the NOx formed during the combustion process. Challenges arise if ammonia distribution within the flue gas or operating temperature is not optimal resulting in ammonia emissions leaving the SCR in a process referred to as "ammonia slip". The ammonia slip may also lead to the formation of particulate matter in the form of ammonium sulfates. Based on the successful deployment of this project, further emission reductions may be achieved by other combustion sources (such as boilers) by the continued development of specialized low NOx burners without the use of reagents.

Health Impacts, Fuel and Emissions Studies

The monitoring of pollutants in the Basin is extremely important, especially when focused on (1) a 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. As we transition to new fuels and forms of transportation, 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 emissions 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. 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. South Coast AQMD is performing a three-year in-use emissions study of 200 next-generation technology heavy-duty vehicles in the Basin. This study, expected to be completed in 2021, is aimed at understanding the activity pattern of different vocations, understanding the real-world emissions emitted from different technologies. Other studies launched in 2020 will evaluate the emissions produced using alternative diesel blends in off-road heavy-duty engines, assess emissions impact of hydrogen-natural gas blend on near-zero emission heavy-duty natural gas engines as well as evaluating emissions produced using higher blend ethanol in light-duty gasoline vehicles.

Emissions 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 most 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 off-road mobile sources lies primarily with the U.S. EPA and CARB, both agencies are currently planning research efforts to aid the next round of rulemaking for

off-road mobile sources.

Low emission and clean fuel technologies that appear promising for on-road mobile sources should be effective at reducing emissions for a number of off-road applications. For example, immediate benefits are possible from particulate traps and SCR technologies that have been developed for on-road diesel applications although retrofits are often hampered by physical size and visibility constraints. Clean fuels such as natural gas, propane, hydrogen and hydrogen-natural gas mixtures may also provide an effective option to reduce emissions from some off-road applications, even though alternative fuel engine offerings are limited in this space, but retrofits such as dual-fuel conversions are possible and need to be demonstrated. 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. Emissions assessments are important in such projects as one technology to reduce one contaminant can increase another.

Technology Assessment and Transfer/Outreach

Since the value of the Clean Fuels Program depends on the deployment and adoption of the demonstrated technologies, technology assessment and transfer efforts are an essential part of the Clean Fuels Program. 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, and coordination of these activities with other organizations, including networking opportunities seeking outside funding. Assembly Bill (AB) 617[4], which requires reduced exposure to communities most impacted by air pollution, required TAO to carry out additional outreach in CY 2019 to AB 617 communities regarding available zero and near-zero emission technologies as well as the incentives to accelerate those cleaner technologies into their communities. TAO staff also provide input as part of working groups, such as the Port of Long Beach EV Blueprint, Los Angeles County EV Blueprint, City of Los Angeles Zero Emissions 2028 Roadmap, Electric Power Research Institute (EPRI) study on air quality and GHG impacts of residential electrification, and Los Angeles Cleantech Incubator projects. Technology transfer efforts also include support for various clean fuel vehicle incentive programs (i.e., Carl Moyer Program, Proposition 1B-Goods Movement, etc.). Furthermore, general and, when appropriate, targeted outreach is an effective part of any program. Thus, the other spectrum of this core technology is information dissemination to educate and promote awareness of the public and end users. TAO staffed information booths to answer questions from the general public and provided speakers to participate on panels on zero and near-zero emission technologies at events, such as the 2030 California Transportation Future Summit, the Hydrogen and Fuel Cells for Freight Workshop, the ACT Virtual Event Series from August through November 2020 and the Renewable Gas 360 Symposium and Webinar Series. While South Coast AQMD's Local Government, Public Affairs & Media Office oversees and carries out such education and awareness efforts on behalf of the entire agency, TAO cosponsors and occasionally hosts various technology-related events to complement their efforts (see page 42 for a description of the technology assessment and transfer contracts executed in CY 2020 as well as a listing of the 8 conferences, workshops and events funded in CY 2020. Throughout the year, staff also participates in various programmatic outreach for the various incentive programs implemented by TAO, including the Carl Moyer Program, Proposition 1B-Goods Movement, Volkswagen Mitigation Program, Replace Your Ride, a U.S. EPA Airshed-funded Commercial Electric Lawn and Garden Incentive and Exchange Program, and residential lawn mower and EV charger rebate programs, to name a few.

[4] https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/about

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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 convention 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 South Coast AQMD 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 3 below 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. The South Coast AQMD Clean Fuels Program funds projects in the Technology Readiness Level ranging between 3-8.

Figure 3: Stages of Clean Fuels Program Projects

Due to the nature of these advanced technology research, development, demonstration and deployment (RD^3) projects, the benefits are difficult to quantify since their full emissions 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.

- Near-zero NOx Engine Development for Heavy-Duty Vehicles
  - Cummins Westport: low-NOx natural gas ISN- G 8.9L and 12L engines (0.2 & 0.02 g/bhp-hr);
  - Southwest Research Institute (SwRI) project to develop a near-zero NOx Heavy-duty diesel engine; and
  - Kenworth CNG Hybrid Electric Drayage Truck project.
- Fuel Cell Development and Demonstrations
  - Kenworth Fuel Cell Range Extended Electric Drayage Truck project;
  - New Flyer Fuel Cell Transit Bus and Air Products Liquid Hydrogen Station at OCTA;
  - Retail light-duty passenger fuel cell vehicles (Toyota Mirai, Hyundai Nexo, Honda Clarity);
  - SunLine Transit Agency Advanced Fuel Cell Bus projects;
  - Commercial stationary fuel cell demonstration with UTC and SoCalGas (first of its kind);
  - UPS demonstration of fuel cell delivery trucks; and
  - Fuel cell Class 8 trucks under Zero Emission Cargo Transport (ZECT) II Program.
- Electric and Hybrid Electric Vehicle Development and Demonstrations
  - Daimler Class 6 and 8 battery electric trucks with Penske and NFI;
  - Volvo Class 8 battery electric trucks with TEC Fontana, DHE, and NFI;
  - Hybrid electric delivery trucks with National Renewable Energy Laboratory (NREL), FedEx and UPS;
  - Plug-in hybrid work truck with Odyne Systems;
  - BYD battery-electric transit bus and trucks (yard hostlers and drayage);
  - LA Metro battery electric buses;
  - Blue Bird Electric School Bus with Vehicle to Grid (V2G) capability;

- TransPower Electric school buses, including V2G capability;
- TransPower/US Hybrid battery electric heavy-duty truck and yard hostlers; and
- Peterbilt battery-electric drayage trucks.

➢ Aftertreatment Technologies for Heavy-Duty Vehicles

- Johnson Matthey and Engelhard trap demonstrations on buses and construction equipment;
- Johnson Matthey SCRT and SCCRT NOx and PM reduction control devices on heavy-duty on-road trucks; and
- SwRI development of aftertreatment for heavy-duty diesel engines

South Coast AQMD 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 RD^3 process.

Strategy and Impact

In addition to the feedback and input detailed in Program Review, the South Coast AQMD 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 South Coast AQMD program with a number of state and federal government organizations, including CARB, CEC, U.S. EPA and DOE/DOT and several of the 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 including but not limited to Bay Area AQMD, Sacramento Metropolitan AQMD, San Diego APCD and San Joaquin Valley APCD, as well as the National Association of Fleet Administrators (NAFA), major local transit districts, local gas and electric utilities, national laboratories, the San Pedro Bay Ports and several universities with research facilities, including but not limited to California State University Los Angeles, Purdue University, Universities of California Berkeley, Davis, Irvine, Los Angeles and Riverside, and University of West Virginia. The list of organizations with which the South Coast AQMD coordinates research and development activities also includes organizations specified in H&SC Section 40448.5.1(a)(2).

In addition, the South Coast AQMD holds periodic meetings with several organizations specifically to review and coordinate program and project plans. For example, the South Coast AQMD 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 CaFCP, the California Stationary Fuel Cell Collaborative, the California Natural Gas Vehicle Partnership (CNGVP), EPRI, Veloz (formerly the PEV Collaborative), the Los Angeles Cleantech Incubator's Regional Transportation Partnership, the California Hydrogen Business Council (CHBC), the SoCalEV Collaborative and the West Coast Collaborative. The coordination efforts with these various stakeholders have resulted in several cosponsored projects.

Descriptions of some of the key contracts executed in CY 2020 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 (OEMs). Such partnerships are essential to address commercialization barriers and to help expedite the implementation of advanced low emission technologies. Table 1 below lists the major funding agency partners and manufacturers actively involved in South Coast AQMD 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 South Coast AQMD program. These partners are identified in the more detailed 2020 Project

Summaries by Core Technologies contained within this report, as well as Table 4 which lists federal, state and local funding awarded to the South Coast AQMD in CY 2020 for RD^3 projects (which will likely result in executed project contracts in 2021).

Table 1: South Coast AQMD Major Funding Partners in CY 2020

Research Funding Organizations	Major Manufacturers/Technology Providers
California Air Resources Board	Landi Renzo USA Corporation
California Energy Commission	Volvo Technology of America LLC
Department of Energy	US Hybrid
National Renewable Energy Laboratory	Roush Cleantech, LLC
U.S. Environmental Protection Agency	**Local Entities & Utilities**
Southwest Research Institute	Southern California Gas Company
	Ports of Los Angeles & Long Beach

The following two subsections broadly address the South Coast AQMD's impact and benefits by describing specific examples of accomplishments including commercial or near-commercial products supported by the Clean Fuels Program in CY 2020. 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 South Coast AQMD research and development coordination efforts in 2020 include: (a) Evaluate Real-World Emissions and Fuel Usage for On-Road Medium- and Heavy- Duty Vehicles; (b) Development of a Pent-Roof Medium-Duty Spark-Ignited Natural Gas Engine in an Optimized Hybrid Vehicle System; and (c) Impact of Low Carbon Fuel Standard (LCFS) Regulation on Regional Air Quality, Emerging Vehicle Technologies, and Infrastructure.

Evaluate Real-World Emissions and Fuel Usage for On-Road Medium- and Heavy-Duty Vehicles

On-road heavy-duty engines are now subject to the 2010 U.S. EPA emissions standards of 0.01 g/bhp-hr PM and 0.20 g/bhp-hr NOx. However, engine manufacturers are using emissions credits which allow them to produce a mixture of engines certified at or below 0.20 g NOx and engines certified at a level higher than 0.20 g NOx to comply with the emissions standards on an average basis. These engines are broadly classified as natural gas stoichiometric engines with three-way catalysts and lean-burn engines with exhaust gas recirculation (EGR) and selective catalytic reduction (SCR) systems, high pressure direct injection dual-fuel engines equipped with SCR systems, diesel engines with advanced EGR and DPF technology, and diesel engines with diesel particulate filter (DPF) and urea-based SCR technology. While recent studies have shown NOx and PM emissions are reduced from heavy-duty vehicles powered by these modern-technology engines, emissions from heavy-duty vehicles still dominate the total basin-wide NOx and PM emissions. Therefore, additional assessment of in-use vehicle emissions remain a critical component for measuring the effectiveness of engine, fuel and aftertreatment technologies and improving emission inventories for air quality modeling and planning as well as developing effective strategies toward achieving the federal ambient air quality standards. Thus, reliable and accurate emissions inventory derived from real-world studies like this one is critical input to such plans.

South Coast AQMD, CEC, CARB and Southern California Gas Company (SoCalGas) have come together to co-fund one of the largest emissions studies on heavy-duty vehicles to-date. The objective of this project is to conduct in-use emissions testing, characterize fuel usage profiles, develop new or improve existing heavy-duty vehicle drive cycles, and assess the impact of current technology and alternative fuels on fuel consumption and in-use emissions from on-road heavy-duty vehicles with gross Vehicle Weight Rating (GVWR) greater than 14,000 lb. The project is designed to involve 200 on-road heavy-duty test vehicles used in transit, school bus, refuse, delivery and goods movement applications, and powered by engines fueled with alternative fuels (fossil fuel-based and renewable natural gas, propane, electric and hybrid), conventional and alternative diesel fuels, and a combination of diesel and natural gas (dual) fuels. The engines are categorized into six groups including:

- MY 2008 – 2015 natural gas engines certified at or below 0.20 g/bhp-hr NOx;
- Natural gas and propane engines certified to CARB optional standard at or below 0.02 g/bhp-hr NOx;
- MY 2010 and newer diesel engines certified at or below 0.20 g/bhp-hr NOx;
- Diesel engines with no SCR systems;
- Dual fuel engines; and
- Alternative fuel engines including electric and fuel cell

The test vehicles are shared equally between West Virginia University (WVU) and University of California Riverside/College of Engineering-Center for Environmental Research & Technology (UCR/CE-CERT) and instrumented with portable emissions measurement systems (PEMS), portable vehicle activity measurement systems (PAMS) and other hardware to monitor daily vehicle activities, fuel usage profiles and emissions. WVU and UCR will then use the PEMS' and PAMS' results to recommend whether to develop new or improved or retain existing vocation-based heavy-duty drive cycles. Moreover, the PEMS testing results represents the current heavy-duty in-use testing program and the emissions results can be correlated to later tasks as well as the emission standard.

Figure 4: PEMS Equipment Install on School Bus

From the PAMS task of data logging 200 trucks, engine and GPS data were logged for up to 12 month to develop new chassis duty cycles specific to Basin such as school bus, goods movement, and delivery. WVU and UCR performed chassis dynamometer tests of 60 test vehicles using the developed or

improved and existing drive cycles. The chassis results is more representative of the real world emissions for the purpose of inventory planning compare to the PEMS test. The chassis cycles were based on large amount of vehicle activity data where the PEMS test is only a snap shot of one working day which could be subjected to many day to day variations. The chassis testing is also using laboratory-grade equipment vs. portable equipment shown in Figure 5.

Figure 5: Chassis Dyno Setup for a Goods Movement Truck

The study also included testing of ten test vehicles used in delivery and goods movement applications with laboratory-grade test equipment to assess real-world in-use emissions, fuel usage profile and engine aftertreatment technology performance as the vehicles are driven over typical vocation routes. Four routes were developed specifically for this study. Due to the weight of the mobile labs, only Class 7 and Class 8 vehicles were evaluated for this portion of the study. The result for this part of the study supplements the gaps between the PEMS and Chassis task.

Figure 6: Real-World In-Use Emissions Testing with Lab-Grade Equipment

As of early 2021, majority of the testing has been completed and the analysis task are set to begin. The goal of the analysis are to develop deterioration factors for engine aftertreatment technologies employed on at least four test vehicles; and based on the test results and discussion with CARB, provide

recommendations to improve CARB EMFAC model, identify technology issues and how to mitigate them, prioritize South Coast AQMD and the CEC staff and financial resources to support advanced engine and aftertreatment technology research and demonstration programs, and match vehicle technologies to vocations for which technology benefits can be maximized.

Development of a Pent-Roof Medium-Duty Spark-Ignited Natural Gas Engine in an Optimized Hybrid Vehicle System

The South Coast AQMD has been supporting rapid deployment of near-zero natural gas engines for both medium-duty and heavy-duty vehicles that have been commercialized since 2015 and supporting alternative fuel light-duty passenger vehicles since early 2000s. With nearly two decades of operational experience in the Basin, natural gas technology is well on its way towards full commercialization achieving a Technology Readiness Level 9 (see summary table on page 15). However, there are ongoing concerns, such as the 2019 Feasibility Assessment for Drayage Trucks by Gladstein, Neandross & Associates, which highlights the need for higher efficiency, more powerful natural gas engines.

To help advance natural gas vehicle technologies, the South Coast AQMD partnered with DOE, NREL and CEC to launch a research effort to identify ways to increase efficiencies from natural gas medium- and heavy-duty engines and vehicles. In September 2018, as part of this ongoing effort, NREL issued an RFP offering funding of approximately $37 million for projects focusing on: (1) reducing the cost of natural gas vehicles; (2) increasing vehicle efficiency; and (3) advancing new innovative medium- and heavy-duty natural gas engine designs. Nine projects were selected for funding through this solicitation, four of which the South Coast AQMD helped cost-share with $1.7 million from the Clean Fuels Fund because they aligned well with AQMP priorities to reduce NOx and PM emissions from transportation sources.

One of those awards was to SwRI, to develop a pent-roof cylinder head version of a medium duty (MD) Isuzu diesel engine for operation on natural gas and integrate it into an Isuzu F-series truck chassis in combination with a hybrid drivetrain system as shown in Figure 7 to provide a demonstration of a highly optimized low GHG emission medium-duty truck.

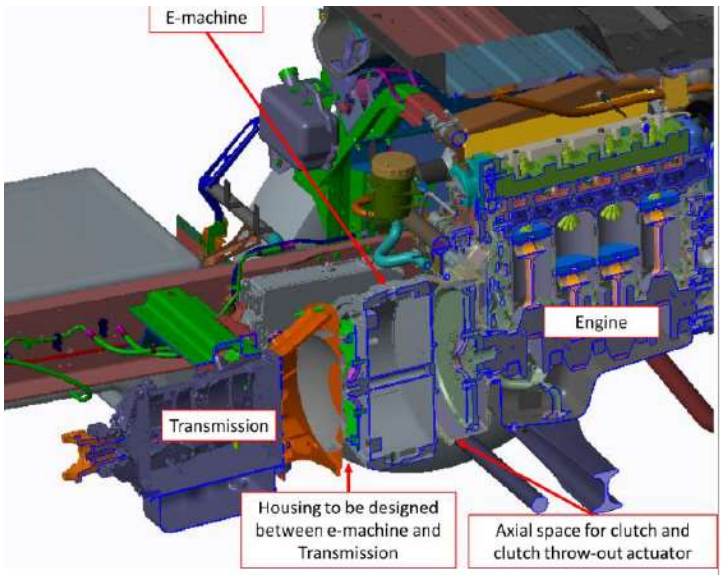


Figure 7: Hybrid Powertrain Integration Cutaway

Spark Ignition (SI) engines operating with stoichiometric combustion can use simple three-way catalysts to achieve low tailpipe emissions in comparison to more complex diesel fuel engines.

However, most SI engines are a compromised design for medium- and heavy-duty applications. They are either derived from an automotive application in which the engine is de-rated to provide for more durability or from a medium- or heavy-duty flat head diesel in which the flow field is compromised for SI combustion.

New technologies, such as cooled EGR, have recently been developed for stoichiometric SI engines which enable high efficiency and high brake mean effective pressure (BMEP) at low engine speeds. This enables torque curves comparable to diesel engines and therefore comparable operating conditions in vehicle, which enables diesel-like durability in an SI engine. SwRI seeks to improve natural gas engines and vehicle efficiency by applying a modern high-tumble combustion system to a medium-duty natural gas engine. Preliminary data from a first-generation prototype single cylinder engine (SCE) and computational fluid dynamic (CFD) studies indicate a very fast burn rate and high dilution tolerance for this combustion system, both of which are essential building blocks to developing an efficient SI multi cylinder engine (MCE). The addition of a high EGR combustion system will provide additional efficiency gains through the potential to increase the engine compression ratio and run with elevated levels of EGR dilution over the full operating map of the engine. Combining this efficient engine with an optimized hybrid system will offer even more efficiency gains, demonstrating the potential for a low NOX, low GHG medium duty truck applicable to real-world applications.

On the vehicle and hybrid system front, SwRI is recommending a mild hybrid architecture with a 100kW machine and 40kWh battery pack. Preliminary results shown in Figure 8 and Figure 9 indicate this hybrid powertrain has following benefits:

- Has a lower initial cost than the diesel powertrain
- Achieves 15% improvement on fuel economy and a 34% reduction in carbon dioxide (CO2) on a combination of Isuzu real world cycles
- Has the potential for 25% to 80% fuel economy improvement compared to the conventional diesel engine vehicle on the standard cycles (heavy-duty urban dynamometer driving schedule (HD-UDDS), heavy heavy-duty diesel truck (HHDDT) schedule transient and city suburban cycle (CSC))

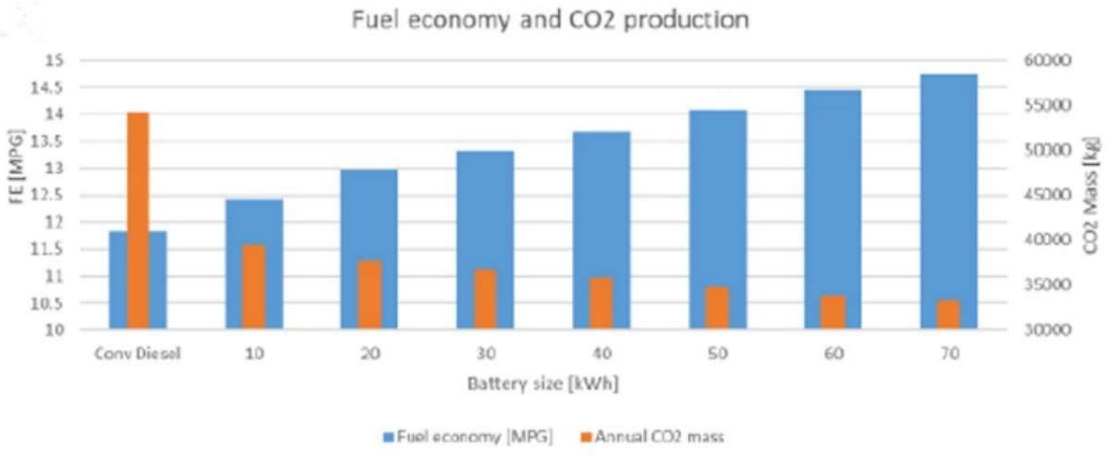


Figure 8: Effect of PHEV Battery CO2 Mass and Fuel Economy

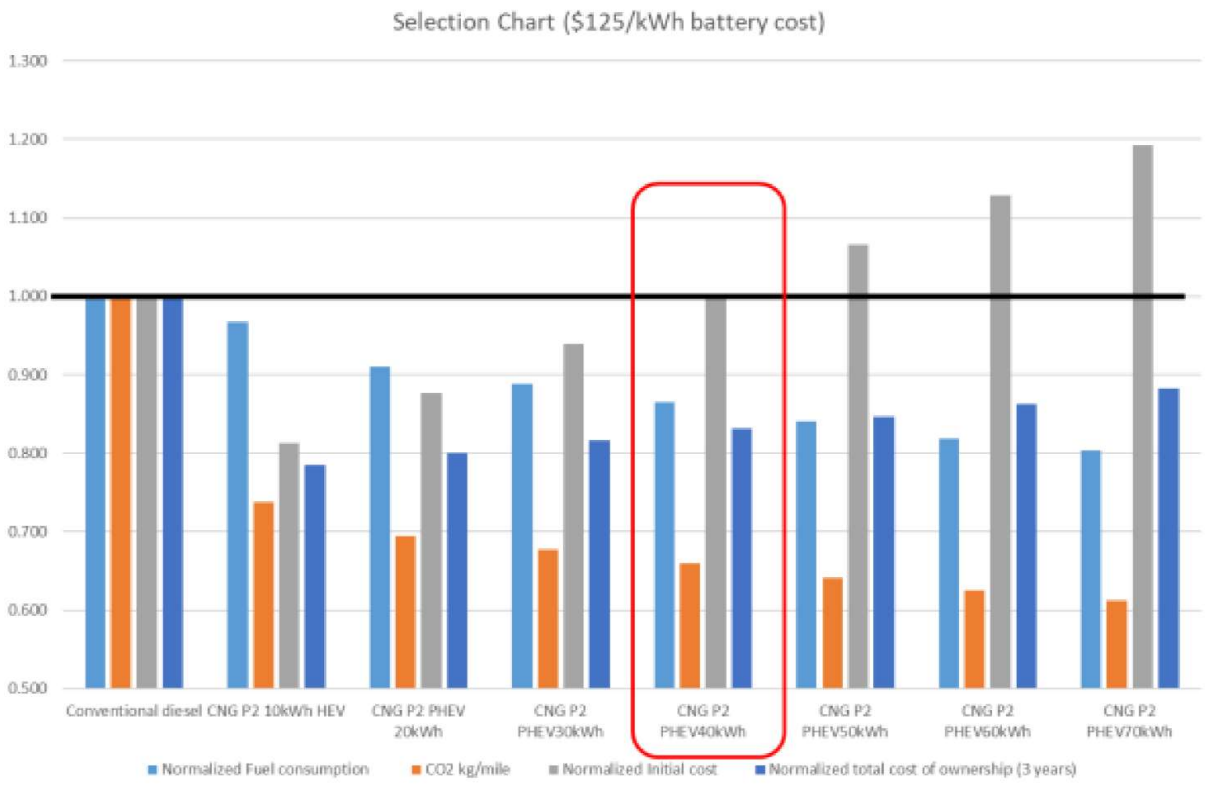


Figure 9: Hybrid Powertrain Selection

A packaging study was also completed using components representative of the hybrid powertrain selected and concluded that these components can be integrated in the base vehicle without compromising the cargo space and with minimal vehicle modifications.

On the engine development front, a new combustion system was designed and tested on a SCE, shown in Figure 9 to determine if the combustion system could achieve the requirements of the current project on an MCE platform. The test results showed that the Gen 2 combustion system met the requirements of the project and the improvements targeted with the system were achieved. These improvements included a reduction in pumping work of up to 0.1 bar pumping mean effective pressure, lower lumped efficiency losses and up to 10% higher EGR tolerance at high engine speeds. Additional analysis work was performed to support the multi-cylinder platform for the demonstration vehicle. The fired engine testing and analysis work were used to select and confirm the compression ratio of the MCE.

Impact of Low Carbon Fuel Standard (LCFS) Regulation on Regional Air Quality, Emerging Vehicle Technologies, and Infrastructure

The California Global Warming Solutions Act of 2006 (AB32) required California to reduce its overall GHG emissions to 1990 levels by 2020. With the transportation sector accounting for the largest source of emissions in California, including GHGs and criteria pollutants such as NOx and PM, CARB moved to adopt the Low Carbon Fuel Standard (LCFS) in 2009 to encourage the production and use of cleaner, low-carbon transportation fuels in California.

The LCFS program is a state-wide effort to reduce the carbon intensity in fuels used in California transportation. The original objective of the regulation was to achieve a 10% reduction in the carbon intensity (CI) of transportation fuels used in the state by 2020, relative to 2010 levels, which was followed in 2018 with a 20% reduction by 2030 under AB32. CI benchmarks for gasoline and diesel

decline each year to meet the 20% objective by 2030.[5] The federal equivalent of the LCFS is the Renewable Fuel Standard (RFS) program which Congress authorized under the Energy Policy Act of 2005 and expanded under the Energy Independence and Security Act of 2007 to reduce greenhouse gas emissions and expand the nation's renewable fuels sector while reducing reliance on imported oil. Both programs work collectively to reduce the State's dependency on fossil fuels and GHG emissions through regulation and incentives.[6]

A major component of these two programs is their respective credit markets and how these credits incentivize production and use of alternative fuels. For the LCFS, it is the LCFS Credit and for the RFS it is the RIN or Renewable Identification Number Credit. Both programs have obligated parties that need to meet certain standards for reducing GHGs and the credits provide a mechanism for meeting these standards. This brief, summarizes the benefits of the LCFS, and the reader is encouraged to explore the comparable benefits from the complimentary RFS and RIN credit programs as an incentive for alternative fuel transportation in California.

As previously mentioned, the LCFS program includes a LCFS credit market where low CI transportation fuels generate carbon reduction credits that can be sold to parties obligated to offset their carbon emissions. The LCFS affords three ways to generate credits: fuel pathways, projects, and capacity-based crediting. Under fuel pathway-based crediting, each transportation fuel has a CI score. The CI is calculated on a full life-cycle basis, indicating the full GHG emissions related to the fuel's production, transportation, storage, and use, and is measured in terms of grams of CO2 equivalent per megajoule of energy (gCO2e per MJ). The differences in energy efficiencies from one technology to a conventional technology is defined by Energy Economy Ratio (EER), i.e. EER for diesel is 1 whereas it is 5 for electricity. The EER can be a significant multiplier in LCFS credit generation. The LCFS credits cannot be generated if they are not real, quantifiable, and enforceable. As such, an LCFS fuel cannot generate credit until it is used as a transportation fuel, so both the fuel producer and the supplier/dispenser/consumer (user) are required to make the LCFS Credit real. Producer and user typically formalize this relationship through an "offtake agreement" that establishes a commitment to deliver and use the LCFS fuel. The actual fuel delivered and used is enforced through quarterly reporting to and accounting by CARB. Offtake agreements provide fuel producers with the security of a buyer and users with some certainty of lower fuel costs because offtake agreements typically delineate a percentage of the LCFS credits to the user. Hence, the LCFS program and the LCFS credit market play important roles in reducing the price of fuel to the consumer and incentivizing the adoption of alternative fuel transportation technologies. In addition, the LCFS credit system helps the alternative fuel producer offset capital and operating expenses associated with the production and transportation of these fuels to the market. [7]

Many low CI transportation fuels in the LCFS also help to reduce ground level air pollution by virtue of their production, their use in advanced zero and near-zero emission transportation technologies, and the associated displacement of conventional petroleum-based counterparts. These "clean alternative transportation fuels" result in little to no "tailpipe emissions" such as the ozone precursor NOx, PM2.5, VOC, and CO. Achieving air quality attainment standards for ozone and PM in the Basin relies significantly on reducing both NOx and PM emissions from the transportation sector. Over the last decades, several emissions and air quality modeling studies were performed to evaluate the air quality impact of increasing renewable fuels in the transportation sector. Research included the blend level of some biofuels in conventional gasoline or diesel or renewable natural gas with conventional gas, infrastructure compatibility, manufacturer warranties, evaporative or toxic emissions, and hydrogen or

[5] https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard
[6] https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard
[7] https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-credit-generation-opportunities

electric vehicle technologies and their respective infrastructure, specifically in the heavy-duty sector. The overall benefits that these low CI fuels can provide are numerous. [8,9,10]

The Clean Fuels Program mandates the funding of programs to help reduce criteria "transportation-based" emissions such as NOx and PM. Hence, the combined efforts of LCFS and Clean Fuels can synergistically advance both causes. Figure 10 provides examples of CI scores for some alternative fuels in the LCFS program.

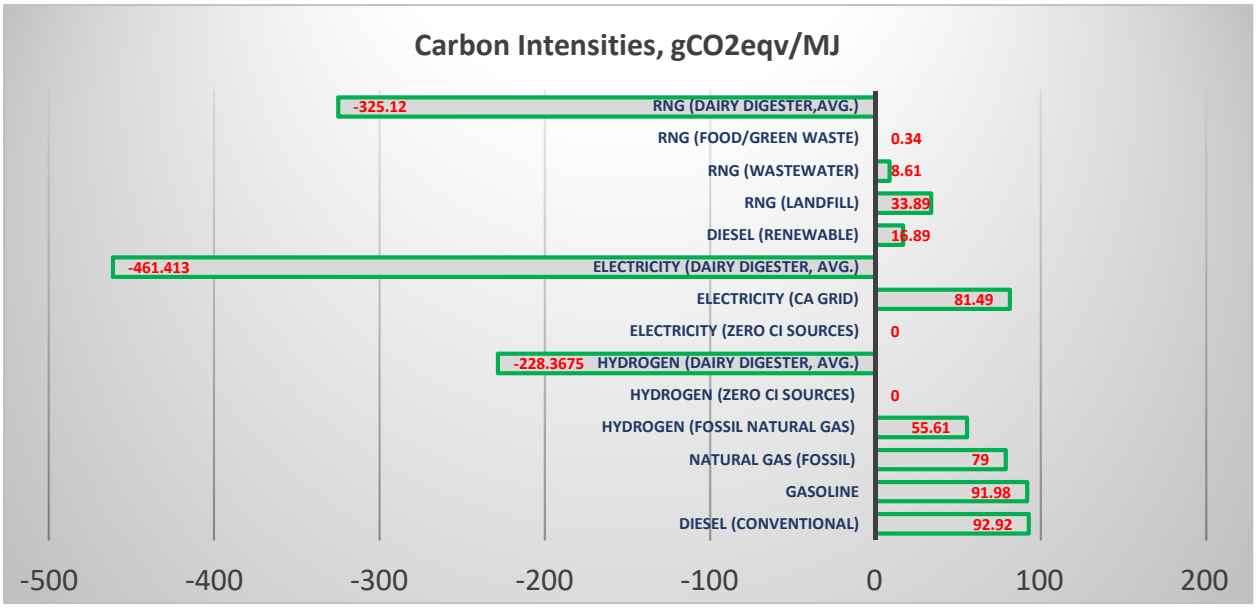


Figure 10: Examples of CI Scores (gCO2e/MJ) for Various LCFS Fuel Pathways (not EER Adjusted). RNG, Electricity, and Hydrogen from Dairy Digester is Averaged from Multiple Pathways in the LCFS.

Some low CI transportation fuels, e.g. electricity from wind, solar and hydro are inherently air pollution free from production to use. Others, such as RNG from the capture of fugitive, high Global Warming Potential methane (e.g. dairy operations, waste biomass that generate very low to negative carbon intensities) combined with cleaner combustion technologies such as advanced near-zero natural gas engines certified to the optional standard of 0.02g-NOx/bhp-hr or cleaner, can result in significantly reduced NOx emissions. However, the real-world benefit of this synergy is dependent on participation from the consumer market and the adoption of the emerging low CI fuel transportation technologies. The economics of adopting new technologies is significant and currently relies on government subsidies. Renewable, low CI projects funded through the Clean Fuels Program (CFP) require demonstrated reductions in criteria pollutants. Such projects include local production of RNG and its demonstrated use in near-zero NOx, RNG-powered heavy-duty vehicles.[11] Other projects that are expected to see CFP funding include renewable hydrogen partnered with fuel cell powered vehicles, or

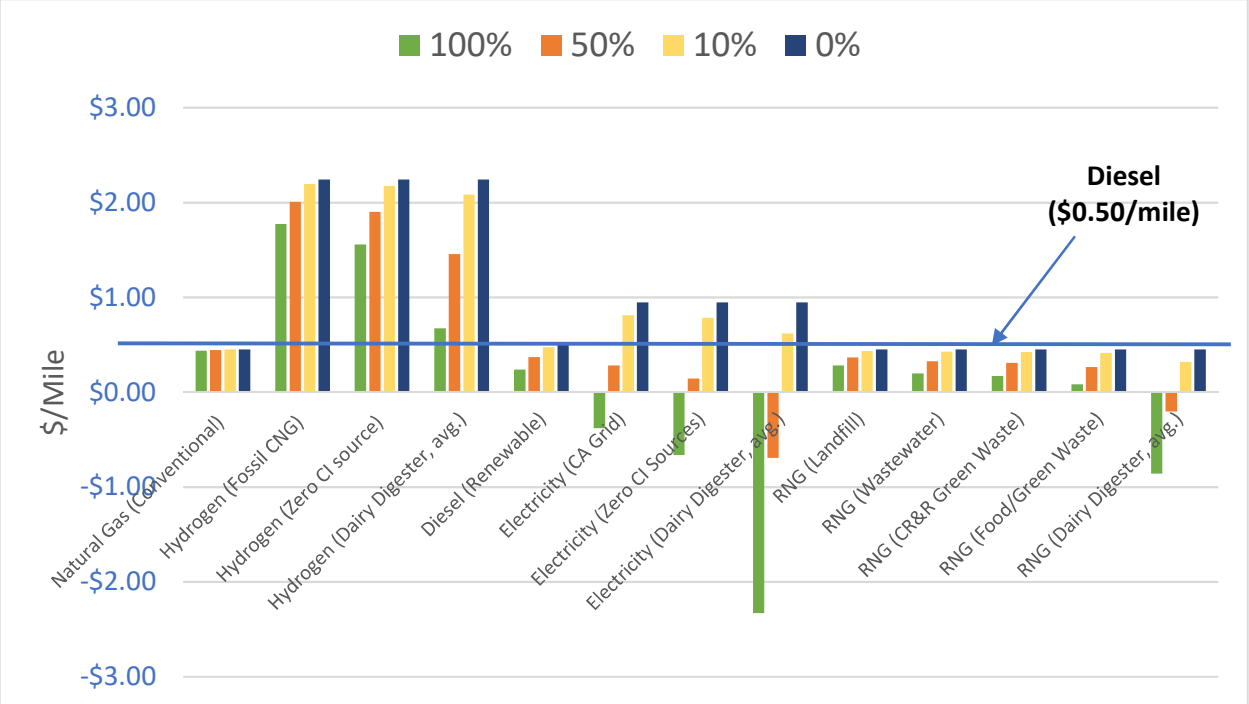
[8] Investigation of the Effect of Mid- and High-Level Ethanol Blends on the Particulate and the Mobile Source Air Toxic Emissions from a Gasoline Direct Injection Flex Fuel Vehicle, Yang et al., Energy Fuels, 2019

[9] Evaluation of the Impacts of Biodiesel and Second Generation Biofuels on NOx Emissions for CARB Diesel Fuels, Hajbabaei et al., Environmental Science and Technology, 2012

[10] Evaluating the regulated emissions, air toxics, ultrafine particles, and black carbon from SI-PFI and SI-DI vehicles operating on different ethanol and iso-butanol blends, Karavalakis et al., Fuel, 2014

[11] CR&R Anaerobic Digester, RNG, and NZE demonstration

renewable electricity used to power heavy-duty battery electric vehicles. The LCFS program and the LCFS Credit Market offer an opportunity to provide low cost, low carbon fuel and energy to these emerging alternative fuel-powered transportation technologies and support the lowering of the total cost of ownership and operation of these technologies. Economic drivers imbedded in the LCFS program could provide the necessary added incentive to accelerate the transformation of many petroleum fuel-powered fleets in the Basin. As the LCFS Credit system is reliant on both producer and user of these fuels the Clean Fuels Program is very interested in exploring outreach efforts with stakeholders in taking a broader look at how the LCFS credit market can further incentivize fleets in this region to adopt clean technologies earlier. In order to see the impact of LCFS credits on the fuel cost per mile, staff performed an analysis using the methodology that is elaborated in the LCFS regulation for calculating CI scores and EER ratios. Figure 11 summarizes the results of this effort, and shows the monetary impact associated with 10%, 50%, and 100% LCFS credits on final fuel cost per mile from various low CI transportation fuels using LCFS credit calculation methodology. As depicted in Figure 11, the greater the "share" of LCFS credit applied to the end user's fuel cost, the lower the cost of fuel per mile. Also, transportation fuels with lower CI scores have greater fuel cost reductions per mile. However, other factors such as total cost of vehicle ownership, cost to install and maintain fueling, or charging infrastructure, as well as the amount of energy consumed will also impact the TCO of these respective technologies. Figure 11 below shows the impact of receiving 10%, 50%, and 100% LCFS credits on final fuel cost per mile of various low CI transportation fuels using LCFS credit calculation methodology.



Note: Assumptions applied: LCFS credit value $180/MT, Diesel as reference fuel, and CI scores shown in Figure 2. Fuel pricing and fuel economies assumed for Class 8 trucks: $3.50 per gallon and 7 mpDGE for diesel; $2.85/DGE and 6.3 mpDGE for CNG; $0.45/kWh and 2.1 kWh/mi for electricity; and $15/kg and 7.5 miles/kg for hydrogen

Figure 11: Fuel Cost ($/mile) Assuming User Receives 10%, 50%, and 100% of the Respective Realized LCFS Credits. 0% Credit is Value of Fuel Assuming Full Retail Pricing.

CLEAN FUELS PROGRAM
2020 Funding & Financial Summary

The South Coast AQMD 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 5), the South Coast AQMD 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 South Coast AQMD Board.

As projects are approved by the South Coast AQMD 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, 2020.

Funding Commitments by Core Technologies

The South Coast AQMD continued its successful leveraging of public funds with outside investment to support the development of advanced clean air technologies. During the period from January 1 through December 31, 2020, a total of 35 contracts/agreements, projects or studies that support clean fuels were executed or amended (adding dollars), as shown in Table 2. The major technology areas summarized are listed in order of funding priority. The distribution of funds based on technology area is shown graphically in Figure 12. This wide array of technology support represents the South Coast AQMD'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 2020 reporting period are shown below with the total projected project costs:

- South Coast AQMD Clean Fuels Fund Contribution $4,137,895
- Total Cost of Clean Fuels Projects $28,944,841

Traditionally, every year, the South Coast AQMD Governing Board approves funds to be transferred to the General Fund Budget for Clean Fuels administration. However, starting with FY 2017, the fund transfer from Clean Fuels to the General Fund was handled through the annual budget process. Thus, when the Board approved the South Coast AQMD's FY 2020-21 Budget on May 1, 2020, it included $1 million from Clean Fuels recognized in TAO's budget for technical assistance, workshops, conferences, cosponsorships and outreach activities, as well as postage, supplies and miscellaneous costs; another $285,000 is transferred from the Clean Fuels Fund to Capital Outlays for alternative fuel vehicle purchases for TAO's Alternative Fuel Demonstration Program as well as supporting vehicle and energy infrastructure. Only the funds committed by December 31, 2020, are included within this report. Any portion of the Clean Fuels Funds not spent by the end of Fiscal Year 2020-21 ending June 30, 2021, will be returned to the Clean Fuels Fund.

Partially included within the South Coast AQMD contribution are supplemental sponsorship revenues from various organizations that support these technology advancement projects. This supplemental revenue for pass-through contracts executed in 2020 totaling approximately $500,000 is listed within Table 3.

For Clean Fuels executed and amended contracts, projects and studies in 2020, the average South Coast AQMD contribution was leveraged with nearly $7 of outside investment. The typical historical leverage amount is $4 for every $1 of South Coast AQMD Clean Fuels funds, but from 2016 to 2020 there were several significant contracts, significant both in funding and in the impact that they hopefully will make in strides toward developing and commercializing clean transportation technologies.

During 2020, the distribution of funds for South Coast AQMD executed contracts, purchases and contract amendments with additional funding for the Clean Fuels Program totaling approximately $4.1 million are shown in the figure below.

Additionally, the South Coast AQMD continued to seek funding opportunities and was awarded an additional $45.8 million in CY 2020 for RD3 projects as listed in Table 4.

As of January 1, 2021, there were 106 open Clean Fuels Fund contracts. Appendix B lists these contracts by core technology.

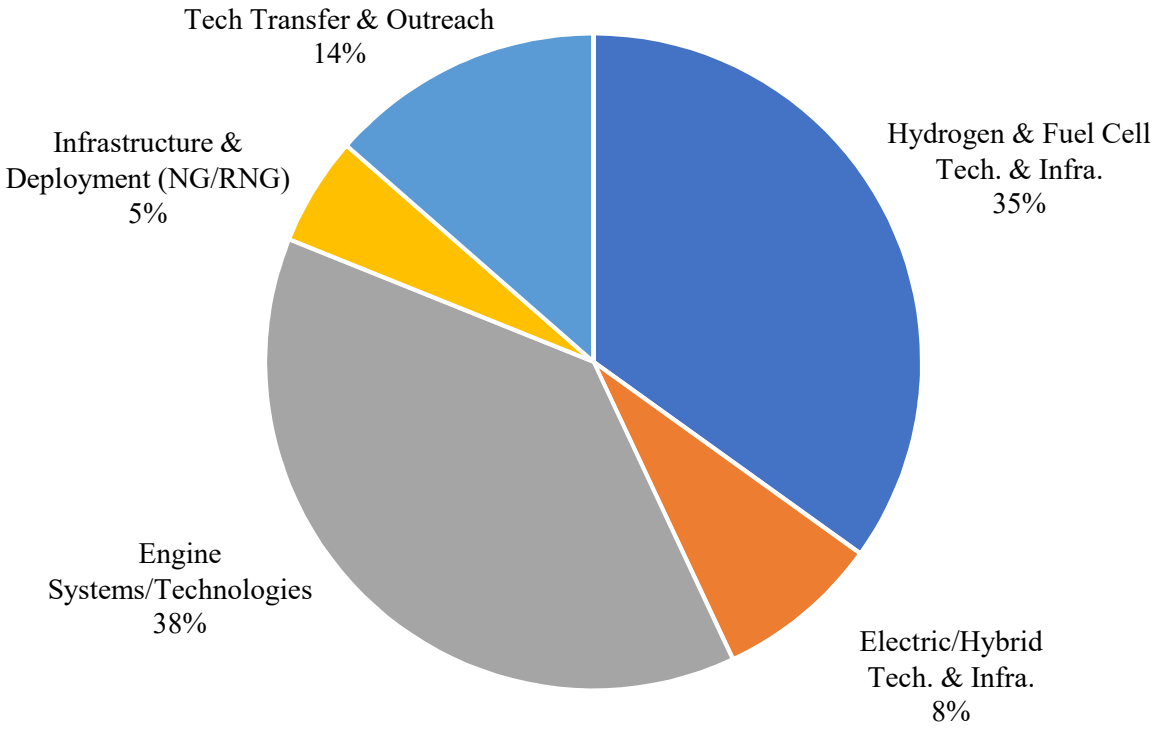


Figure 12: Distribution of Funds for Executed Clean Fuels Projects CY 2020 ($4.1M)

Review of Audit Findings

State law requires an annual financial audit after the closing of each South Coast AQMD'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, 2020, the firm of BCA Watson Rice, LLP, 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 South Coast AQMD financial statements, which include the Clean Fuels Program revenue and expenditures. BCA Watson Rice, LLP, gave the South Coast AQMD an "unmodified opinion," the highest obtainable. Notably, the South Coast AQMD has achieved this rating on all prior annual financial audits.

Project Funding Detail by Core Technologies

The 35 new and continuing contracts/agreements, projects and studies that received South Coast AQMD funding in CY 2020 are summarized in Table 2 (beginning on the next page), together with the funding authorized by the South Coast AQMD and by the collaborating project partners.

Table 2: Contracts Executed or Amended (w/$) between January 1 & December 31, 2020

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Hydrogen/Mobile Fuel Cell Technologies and Infrastructure						
17317	American Honda Motor Co., Inc.	One-Year Extension of Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle	3/22/17	3/22/21	4,816	4,816
17343	American Honda Motor Co., Inc.	One-Year Extension of Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle	2/21/17	2/21/21	4,899	4,899
17385	American Honda Motor Co., Inc.	One-Year Extension of Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle	5/17/17	5/17/21	4,981	4,981
20108	University of California, Irvine	Develop Optimal Operation Model for Renewable Electrolytic Fuel Production	6/17/20	6/16/21	100,000	500,000
19313	Equilon Enterprises LLC DBA Shell Oil Products	Construct & Operate Renewable Hydrogen Refueling Station	6/30/20	4/1/22	1,200,000	12,000,000
21092	Frontier Energy, Inc.	Participate in California Fuel Cell Partnership for Calendar Year 2020 and Provide Support for Regional Coordinator	1/1/20	12/31/20	120,000	1,300,000
Engine Systems/Technologies						
20092	Southwest Research Institute	Natural Gas Engine and Vehicles Research and Development - Pent-Roof Medium Duty Natural Gas Engine	10/14/20	4/13/24	475,000	6,000,000
20122	Landi Renzo USA Corporation	Develop and Commercialize a Near-Zero Natural Gas Conversion System for On-Road Medium-Duty Vehicles	1/17/20	7/31/21	600,000	1,455,072
20316	US Hybrid	NaturalGas Engine & Vehicles Research & Development - Plug-In Hybrid CNG Drayage Truck (PHET)	6/2/20	12/1/23	500,000	2,853,006
Electric/Hybrid Technologies and Infrastructure						
14184	Green Paradigm Consulting, Inc.	DC Fast Charging Network Provider	4/4/14	6/30/23	40,000	40,000
14375	National Renewable Energy Laboratory	Data Collection & Analysis of Zero-Emission Cargo Transportation (ZECT) Demonstration Trucks	6/26/01	3/31/21	20,000	20,000
17225	Volvo Technology of America LLC	Development and Demonstration of up to 2 Class 8 Battery Electric Drayage Trucks	6/9/17	12/31/21	353,000	353,000
17244	Kenworth Truck Company	Development & Demonstration of four Class 8 CNG Hybrid Electric Drayage Trucks	9/8/17	4/14/21	(1,184,369)	(3,251,501)
18075	Selman Chevrolet Company	Extension of Lease for Two 2017 Chevrolet Bolt All-Electric Vehicles for Three Years	8/18/17	2/18/21	4,068	4,068

Table 2: Contracts Executed or Amended (w/$) between January 1 & December 31, 2020 (cont'd)

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Electric/Hybrid Technologies and Infrastructure (cont'd)						
20097	Zeco Systems, Inc. DBA Greenlots	Operate, Maintain and Network the EV Chargers	2/14/20	2/13/23	155,664	155,664
20125	Roush Cleantech, LLC	Develop and Demonstrate Battery Electric Medium-Duty Truck	3/19/20	3/18/22	937,500	3,200,000
20248	Los Angeles County Economic Development Corp	Economic and Workforce Impact Analysis of Electric Revolution in Southern California	7/7/20	1/2/21	10,000	150,000
Fueling Infrastructure and Deployment (Natural Gas/Renewable Fuels)						
20178	Whittier Union High School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	2/21/20	11/30/34	196,500	1,052,500
Transfer	California Natural Gas Vehicle Partnership	Participation in the California Natural Gas Vehicle Partnership for Fiscal Years 2018-19 and 2019-20	7/1/20	6/30/22	25,000	170,000
Technology Assessment and Transfer/Outreach						
08210	Sawyer Associates	Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities	2/22/08	2/28/22	15,000	15,000
12376	University of California, Riverside	Technical Assistance with Alternative Fuels, Biofuels, Emissions Testing, and Zero-Emission Transportation Technology	6/1/14	5/31/22	150,000	150,000
19078	Green Paradigm Consulting, Inc.	Technical Assistance with Alternative Fuels, Evs, Charging & Infrastructure and Renewable Energy	9/7/18	9/30/21	211,800	540,300
20265	Eastern Research Group	Technical Assistance with Heavy-Duty Vehicle Emissions Testing, Analyses & Engine Development & Applications	6/17/20	6/16/22	50,000	50,000
Various	Various	Cosponsor 8 Conferences, Workshops & Events plus 3 Memberships	01/01/20	12/31/20	141,960	2,170,960
Direct Pay	Prizm Imaging	Procure Outreach Materials	01/01/20	12/31/20	1,848	1,848
Direct Pay	Various	Alternative Fuel Demonstration Vehicle Program Related Expenses	01/01/20	12/31/20	228	228
						$28,944,841

Table 3: Supplemental Grants/Revenue Received into the Clean Fuels Fund (31) in CY 2020

Revenue Agreement #	Revenue Source	Project Title	Contractor	SCAQMD Contract #	Award Total $
20132	Southern California Gas Company	Near-Zero Natural Gas Conversion System for On-Road Medium-Duty Vehicles	Landi Renzo USA Corporation	20122	300,000
19165	US EPA Airshed Grant	Near-Zero CNG School Buses	Whittier Union High School District	20178	196,500
Table 3 lists revenue awarded to South Coast AQMD and received into the Clean Fuels Fund (31) only if the South Coast AQMD pass-through contract was executed during the reporting CY (2020).					**$496,500**

Table 4: Summary of Federal, State and Local Funding Awarded or Recognized in CY 2020

Awarding Entity or Program	Award (*) or Board Date	Purpose	Contractors	Award Total/ Fund
U.S. EPA DERA Grant	03/06/20	Fund up to 35% of Near Zero-Emission Trucks	Ecology Auto Parts	$1,601,523 Fund 17
Southern California Gas Company	04/03/20	Emissions Impacts of Hydrogen-Natural Gas Fuel Blends in Near Zero-Emission Heavy-Duty Natural Gas Engines	University of California, Riverside	$305,000 Fund 31
U.S. EPA DERA Grant	04/03/20	Truck Trade Down Program	Various	$789,581 Fund 31 $719,500 Fund 17
U.S. EPA SEPs	04/03/20	Install Air Filtration Systems at Schools	IQAir North America	$146,250 Fund 75
California Air Resources Board	04/03/20	Install Air Filtration Systems at Schools and Residences	IQAir North America	$1,205,300 Fund 75
Southern California Gas Company	04/03/20	Evaluation of Vehicle Maintenance Costs for On-Road Heavy-Duty Vehicles (HDVs)	West Virginia University	$150,000 Fund 31
US EPA Airshed Grant	09/04/20	Deploy Class 8 Battery Electric Trucks and EV Infrastructure	Volvo Group North America, LLC	$20,000,000 Fund 17
US EPA Airshed Grant	09/04/20	Deploy Fuel Cell Transit Buses	SunLine Transit Agency	$5,906,601 Fund 17
US EPA Section 105 CATI Grant	09/04/20	Demonstrate Additional Battery Electric Trucks for the Volvo LIGHTS Project	Volvo Group North America, LLC	$500,000 Fund 67

Table 4: Summary of Federal, State and Local Funding Awarded or Recognized in CY 2020 (cont'd)

Awarding Entity or Program	Award (*) or Board Date	Purpose	Contractors	Award Total/ Fund
US EPA Airshed Grant	09/04/20	Develop and Demonstrate Selective Catalytic Reduction Retrofit Technology for an Ocean-Going Vessel	MAN Energy Solutions USA Inc.	$11,414,700 Fund 83
San Pedro Bay Ports	09/04/20	Develop and Demonstrate Selective Catalytic Reduction Retrofit Technology for an Ocean-Going Vessel	MAN Energy Solutions USA Inc.	$300,000 Fund 83
Southern California Gas Company	10/02/20	Develop, Demonstrate and Commercialize the Ford 7.3 Liter Medium-Duty Natural Gas and Propane Conversion System	Agility Fuel Solutions	$154,325 Fund 31
U.S. EPA Clean Diesel Program	12/04/20	Replace Diesel Transportation Refrigeration Units (TRUs) with Electrified TRUs	Albertsons Companies	$2,240,721 Fund 31
California Air Resources Board	12/04/20	Install Air Filtration Systems at Schools and Residences	IQAir North America	$26,850 Fund 75
Table 4 provides a comprehensive summary of revenue awarded to South Coast AQMD during the reporting CY (2020) for TAO's RDD&D efforts which falls under the umbrella of the Clean Fuels Program, regardless of whether the revenue will be received into the Clean Fuels Program Fund (31) or the South Coast AQMD pass-through contract has been executed.				**$45,760,351**

Project Summaries by Core Technologies

The following summaries describe the contracts, projects and studies executed, or amended with additional dollars, in CY 2020. They are listed in the order found in Table 2 by category and contract number. As required by H&SC Section 40448.5.1(d), the following project summaries provide the project title; contractors and, if known at the time of writing, key subcontractors or project partners; South Coast AQMD cost-share, cosponsors and their respective contributions; contract term; and a description of the project.

Hydrogen/Mobile Fuel Cell Technologies and Infrastructure

17317: Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle for TAO's Fleet Demonstration Program

Contractor: American Honda Motor Company, Inc.	South Coast AQMD Cost-Share	$ 4,816
Term: 03/22/17 – 03/22/21	Total Cost:	$ 4,816

South Coast AQMD has been working with American Honda and has participated in on-road testing of their fuel cell electric vehicles starting with research programs since 2004 when South Coast AQMD's first hydrogen station in Diamond Bar started fueling the first fuel cell car – the Honda FCX - in our fleet. Several fuel cell vehicle generations have resulted in the 2017 Honda Clarity Fuel Cell for retail lease through 12 specially trained dealerships near retail hydrogen fueling stations in California. The Honda Clarity fuel cell vehicle is a five-passenger sedan that travels 366 miles before refueling with 70 MPa gaseous hydrogen and has U.S. EPA estimated fuel economy of 67 mpge. The vehicle will be placed into South Coast AQMD's alternative fuel vehicle fleet to demonstrate new fuel cell vehicles to public and private organizations to promote zero emission technologies. This lease was extended one year to continue mileage accumulation until new model is available.

17343: Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle for TAO's Fleet Demonstration Program

Contractor: American Honda Motor Company, Inc.	South Coast AQMD Cost-Share	$ 4,899
Term: 02/21/17 – 02/21/21	Total Cost:	$ 4,899

As noted, South Coast AQMD has been working with American Honda and has participated in on-road testing of their fuel cell electric vehicles starting with research programs since 2004 when South Coast AQMD's first hydrogen station in Diamond Bar started fueling the first fuel cell car – the Honda FCX - in our fleet. Several fuel cell vehicle generations have resulted in the 2017 Honda Clarity Fuel Cell for retail lease through 12 specially trained dealerships near retail hydrogen fueling stations in California. This second vehicle will also be placed into South Coast AQMD's alternative fuel vehicle fleet to demonstrate new fuel cell vehicles to public and private organizations to promote zero emission technologies. This lease was extended one year to continue mileage accumulation until new model is available.

17385: Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle for TAO's Fleet Demonstration Program

Contractor: American Honda Motor Company, Inc.	South Coast AQMD Cost-Share	$ 4,981
Term: 05/17/17 – 05/17/21	Total Cost:	$ 4,981

This third Honda 2017 Clarity Fuel Cell will also be placed into South Coast AQMD's alternative fuel vehicle fleet to demonstrate new fuel cell vehicles to public and private organizations to promote zero emission technologies. Given the number of events the South Coast AQMD cosponsors and attends throughout the Basin, three of these vehicles were added to the Fleet Demonstration Program in 2017. This lease was extended one year to continue mileage accumulation until new model is available.

20108: Develop Optimal Operation Model for Renewable Electrolytic Fuel Production

Contractor: University of California, Irvine	South Coast AQMD Cost-Share	$ 100,000
	Cosponsors:	
	University of California, Irvine	350,000
	NREL	50,000
Term: 06/17/20 – 06/16/21	Total Cost:	$ 500,000

The University of California Irvine (UCI) through its Advanced Power and Energy Program is developing a roadmap for deployment of renewable electrolytic hydrogen production facilities in California. The proposed project leverages expertise and resources through NREL and adds a comprehensive analysis of a rapidly developing electrolysis technology, which portends to serve as one of the most promising pathways for the production of renewable hydrogen. The proposed project will analyze hypothetical scenarios of model electrolysis projects, including project location, production capacity, efficiency, source of electricity, footprint, dynamic operation characteristics, capital cost, operating cost and other parameters. Based on the modeling and analyses defined above, the project will extract findings on optimal economic dispatch of the electrolysis facilities and air quality impact.

19313: Construct and Operate Renewable Hydrogen Refueling Station

Contractor: Equilon Enterprises LLC DBA Shell Oil Products	South Coast AQMD Cost-Share	$ 1,200,000
	Cosponsors:	
	CEC ARFVTP, GFO-17-603	8,000,000
	Toyota	1,400,000
	Equilon	1,400,000
Term: 06/30/20 – 04/01/22	Total Cost:	$ 12,000,000

On April 6, 2018, the CEC awarded $8 million to Equilon Enterprises LLC for construction and operation of a renewable hydrogen refueling station. Equilon will own and operate the 1,000 kg/day truck refueling station on land at the Port of Long Beach, sub-leased from Toyota, which under a separate contract with Fuel Cell Energy, will generate hydrogen using a Tri-Generation system, using biogas, to produce up to 1.27 tons per day of renewable hydrogen. The station can also use delivered hydrogen. In addition to refueling Toyota vehicles at 700 bar, South Coast AQMD co-funding will be used to refuel vehicles at 350 bar, supporting various fuel cell demonstration vehicles by multiple operators in the local ports.

21092: Participate in California Fuel Cell Partnership for Calendar Year 2020 and Provide Support for Regional Coordinator

Contractor: Frontier Energy Inc	South Coast AQMD Cost-Share	$ 120,000
	Cosponsors:	
	7 automakers, 4 public agencies, 7 industry takeholders, 35 Full & Associate Members	1,180,000
Term: 01/01/20 – 12/31/20	Total Cost:	$ 1,300,000

In April 1999, the California Fuel Cell Partnership (CaFCP) was formed with eight members; South Coast AQMD 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 Frontier Energy Inc. for their portion of the CaFCP's administration. In 2020, South Coast AQMD contributed $70,000 for Executive membership and $50,000 to continue support for Regional Coordinator activities.

Engine Systems/Technologies

20092: Natural Gas Engine and Vehicles Research and Development – Pent-Roof Medium-Duty Natural Gas Engine

Contractor: Southwest Research Institute	South Coast AQMD Cost-Share	$ 475,000
	Cosponsors:	
	US Dept. of Energy	2,525,000
	Southwest Research Institute, Isuzu Technical Center of America, Inc. and Southern California Gas Company	3,000,000
Term: 10/14/20 – 04/13/24	Total Cost:	$ 6,000,000

In April 2019, the South Coast AQMD board approved 4 projects under a natural gas vehicle research consortium made up with DOE, NREL, CEC, SoCalGas and South Coast AQMD totaling over $26 million. This project, SwRI along with Isuzu are set to develop and new cylinder head for a 4HK Isuzu gasoline engine (ongoing project at the time at SwRI) that enables the use of natural gas fuel and achieve near-zero NOx emissions as well as integrating the new engine into a medium-duty truck equipped with hybrid-electric powertrain. The technical targets of the project include casting and building new natural gas with optimized pent-roof, develop calibration and aftertreatment system to achieve 0.02 gram NOx, achieve combined fuel economy exceeding the diesel baseline as well as minimize cost by selection the best available hybrid powertrain. The project was kicked off in early 2020 and expect to go on for 37 months from project initiation.

20122: Develop and Commercialize a Near-Zero Natural Gas Conversion System for On-Road Medium-Duty Vehicles

Contractor: Landi Renzo USA Corporation	South Coast AQMD Cost-Share	$ 300,000
	Cosponsors:	
	Southern California Gas Company (received as pass-through funds into Fund 31)	300,0000
	Landi Renzo USA Corporation	855,0720
Term: 01/17/20 – 07/31/21	Total Cost:	$ 1,455,072

Optimization of the recently introduced Ford 7.3 liter natural gas engine for medium-duty vehicles. Develop a commercially available engine that is certified to the CARB optional low NOx standard of 0.02 g/bhp NOx. The optimization will include modification of controller software and the latest in catalyst technology to reach near-zero NOx. Once developed, the engine will be tested using both the Federal Test Procedure for emissions certification and non-certification test cycles representative of real-world use in different vocations that are prevalent in the Basin. The use of vocational-specific test cycles will provide additional insight towards the engine's real-life emission reduction potential at the desired increased efficiency.

20316: Natural Gas Engine & Vehicles Research & Development - Plug-In Hybrid CNG Drayage Truck (PHET)

Contractor: US Hybrid	South Coast AQMD Cost-Share	$ 500,000
	Cosponsors:	
	DOE	634,137
	CEC	860,000
	US Hybrid	858,869
Term: 06/02/20 – 12/01/23	Total Cost:	$ 2,853,006

The DOE, NREL, CEC, and South Coast AQMD partnered to launch a research effort to increase efficiency of natural gas engines for heavy-duty vehicles. Based on DOE projections, natural gas is poised to play a key role as a versatile, low-emissions and low GHG fuel. Advances in the ability to capture methane from waste streams such as landfills, wastewater treatment plants, municipal solid waste, and livestock operations for the production of Renewable Natural Gas (RNG) adds a robust renewable alternative to conventional fuels. This project will develop the next generation of a plug-in parallel hybrid heavy duty Class 8 platform based on the near-zero-emission 8.9-liter natural gas engine (L9N) from Cummins Westport (CWI). The L9N will be paired in parallel with a comparably powered battery-electric drivetrain to produce a powertrain comparable to much larger power systems. The resulting plug-in hybrid CNG truck will have improved efficiency, reduced criteria and GHG emissions, and smart geofencing and sufficient battery storage to operate zero emission miles in sensitive areas.

Electric/Hybrid Technologies and Infrastructure

14184: DC Fast Charging Network Provider

Contractor: Green Paradigm Consulting, Inc.	South Coast AQMD Cost-Share	$ 40,000
Term: 04/04/14 – 06/30/23	Total Cost:	$ 40,000

This contract was funded using CEC funds and Clean Fuels funds towards hardware and installation costs. Clean Fuel Connection, Inc. (CFCI) installed 10 DC fast chargers at seven sites including the Hollywood & Highland red line metro stop, Little Tokyo gold line metro stop, Westwood LADOT parking garage, La Kretz Center for Innovation, Victoria Gardens shopping mall in Rancho Cucamonga, and Mel's Diner in Santa Monica. These chargers are maintained and operated as part of the EVgo network and provide public charging to fill gaps in corridor charging in Los Angeles and San Bernardino counties.

14375: Data Collection & Analysis of Zero-Emission Cargo Transportation (ZECT) Demonstration Trucks

Contractor: National Renewable Energy Laboratory	South Coast AQMD Cost-Share	$ 20,000
Term: 06/26/01 – 3/31/21	Total Cost:	$ 20,000

NREL has provided data analysis to the US DOE's Zero Emission Cargo Transport (ZECT 1) program since its commencement in 2012. Under ZECT 1 two technology integrators developed three types of zero- and near-zero- emission Class 8 drayage truck technologies, consisting of two battery electric truck platforms, one CNG series-hybrid electric truck and one LNG parallel-hybrid platform. In June 2014, South Coast AQMD entered into a three-year contract with NREL to collect and analyze data on the performance of these zero- and near-zero-emission Class 8 tractors to provide consistent and objective evaluation. Delays in vehicle development required design adjustments that resulted in the DOE extending the project twice through March 2020. The protracted project required additional time and work effort by NREL that resulted in additional funding to complete this project.

17225: Develop and Demonstrate Up to Two Class 8 Battery Electric Drayage Trucks

Contractor: Volvo Technology of America, LLC	South Coast AQMD Cost-Share	$ 0
	Cosponsors	
	California Air Resources Board *(received as pass-through funds into Fund 67)*	353,000
Term: 06/09/17 – 12/31/21	Total Cost:	$ 353,000

Volvo is demonstrating a newer version of a PHEV diesel hybrid Class 8 truck developed under a South Coast AQMD/DOE grant to continue refinement towards commercialization, including integration of innovative and significant C-ITS efficiency measures through its Eco-Drive software, in cooperation with LA Metro and its miniburner aftertreatment technology. The PHEV diesel hybrid truck is designed to maximize operations in zero emission mode when traveling through disadvantaged communities.

17244: Develop and Demonstrate Up to Two Class 8 Battery Electric Drayage Trucks

Contractor: Kenworth Truck Company	South Coast AQMD Cost-Share	$ (1,184,369)
	Cosponsors	
	California Air Resources Board (reduced pass-through funds in Fund 67)	(2,067,132)
Term: 09/08/17 – 04/14/21	Total Cost:	$ (3,251,501)

Due to some technical challenges, Kenworth is only developing two instead of four Class 8 plug-in hybrid electric trucks with zero emission operation capability. These trucks have begun their demonstration in revenue drayage service at TTSI. The trucks will operate in all-electric and in conventional hybrid electric mode using a CNG engine. This will provide an opportunity to test the manufacturing processes for repeatability, optimize an architecture developed for this application and re-introduce field operations to this type of product. The power output of the electric drivetrain is comparable to standard Class 8 vehicles, but it will have a greater operating efficiency and improved fuel economy.

18075: Lease Two 2017 Chevrolet Bolt All-Electric Vehicles for Three Years for TAO's Fleet Demonstration Program

Contractor: Selman Chevrolet Company	South Coast AQMD Cost-Share	$ 4,068
Term: 08/18/17 – 02/18/21	Total Cost:	$ 4,068

The South Coast AQMD operates a number of alternative fuel vehicles (AFVs) in its Fleet Demonstration Program to support the use of zero emission vehicles and bring awareness to the public of their viability. The all-new 2017 Chevrolet Bolt EV is available in all 50 states and was selected as the Green Car Journal 2017 Green Car of the Year. It uses a 60 kWh LG Chem lithium ion (nickel-manganese-cobalt) low-profile battery pack for this five-passenger crossover, providing 238 miles U.S. EPA-estimated all-electric range, with improved passenger and cargo capacity. Increased safety technology includes a rear camera mirror with wide-angle rearview and overhead view. Use of DC fast chargers to replenish the battery up to an estimated 90 miles of range in 30 minutes will be demonstrated and evaluated during lease for broader fleet implementation. Carpool lane solo-access with red carpool sticker will be utilized when out in the community. These vehicle leases were extended six months to continue mileage accumulation.

20097: Operate, Maintain and Network the EV Chargers

Contractor: Zeco Systems, Inc. DBA Greenlots	South Coast AQMD Cost-Share	$ 155,664
Term: 02/14/20 – 02/13/23	Total Cost:	$ 155,664

Greenlots is providing three years of maintenance and operation services for 92 Level 2 EV charging ports for public and workplace charging at South Coast AQMD headquarters. This includes handling payment of EV charging sessions, monitoring of EV chargers, dispatching and handling routine maintenance, escalating charger issues, maintaining and periodically updating hardware and software updates, and providing reporting and analysis tools through its SKY networking platform.

20125: Develop and Demonstrate Battery Electric Medium-Duty Truck

Contractor: Roush Cleantech, LLC	South Coast AQMD Cost-Share	$ 937,500
	Cosponsors:	
	Roush Cleantech, LLC	2,062,500
	Penske Truck Leasing	200,000
Term: 03/19/20 – 03/18/22	Total Cost:	$ 3,200,000

Demand for commercially available heavy-duty battery electric trucks continues to increase, but availability is limited to a few suppliers. Roush CleanTech will develop a medium-duty battery electric Class 6-7 commercial vehicle and demonstrate the technology with local commercial fleets. These applications are local and regional goods movement, municipal fleets, utilities, a variety of transit and shuttle bus operations, and school buses. This project will develop and demonstrate three medium-duty electric trucks and these vehicles will be used to generate actual customer use-case data to help with validation cycle requirements, as well as to obtain customer feedback on usability and performance.

20248: Economic and Workforce Impact Analysis of Electric Revolution in Southern California

Contractor: Los Angeles County Economic Development Corporation	South Coast AQMD Cost-Share	$ 10,000
	Cosponsors:	
	Los Angeles County Economic Development Corporation and project partners	140,000
Term: 07/07/20 – 01/02/21	Total Cost:	$ 150,000

Los Angeles County Economic Development Corporation (LAEDC) conducted the Economic and Workforce Impact Analysis of Electric Mobility Revolution in Southern California. LAEDC was founded in 1981 as a nonprofit, public-benefit organization and focuses on economic impact studies, regional industry and cluster analysis and issue studies, particularly in workforce development and labor market analysis. This contract provided a comprehensive study on the electrification of mobility in Southern California, defined as the five counties of Los Angeles, Orange, Ventura, Riverside and San Bernardino. The research and resulting report from this analysis is expected to contribute to the following aims: business attraction to Southern California, workforce development in advanced mobility, and catalyze public debate and government action regarding legislation, regulation, urban planning, taxes and incentives surrounding electric mobility to demonstrate success in transportation electrification in the region.

Fueling/ Infrastructure and Deployment (Natural Gas/Renewable Fuels)

20178: Replace Diesel School Buses with Near-Zero Emissions CNG Buses

Contractor: Whittier Union High School District	South Coast AQMD Cost-Share	$ 0
	Cosponsors:	
	U.S. EPA *(received as pass-through funds into Fund 31)*	196,500
Term: 02/21/20 – 11/30/34	Total Cost:	$ 1,052,500

South Coast AQMD executed a grant for Whittier Union High School District to replace a total of five old pre-1994 diesel school buses with CNG school buses certified to meet the optional low NOx, near-zero standard of 0.02 g/bhp-hr. The award provided a total of $1,052,500 for the purchase of five Type D CNG school bus including sales tax. These school buses are partially funded by a U.S. EPA Airshed Grant, which were recognized into the Clean Fuels Fund. The grant award $1,052,500, compromised of $196,500 by the U.S. EPA Airshed Grant and $856,000 by South Coast AQMD's AB 923 funds. The Whittier Union High School District has taken possession of five 2019 CNG school buses.

Transfer: Participation in the California Natural Gas Vehicle Partnership for Fiscal Year 2020-21 and 2021-22

Contractor: California Natural Gas Vehicle Partnership	South Coast AQMD Cost-Share	$ 25,000
	Cosponsor	
	CNGVP Participating Members	155,000
Term: 07/01/20 – 06/30/22	Total Cost:	$ 180,000

The California Natural Gas Vehicle Partnership (CNGVP) was formed to accelerate the development of advanced natural gas vehicle technologies to provide a benchmark for lowering emissions from petroleum-based engines and to provide a pathway to hydrogen fuel cell use in the next two decades. The South Coast AQMD spearheaded the formation of this strategic alliance, which comprises state and federal air quality agencies, transportation and energy agencies, vehicle and engine manufacturers, fuel providers, and transit and refuse hauler organizations. Partnership Steering Committee members contribute monies to fund specific projects intended to achieve the goal of the Partnership. In September 2020 the South Coast AQMD approved $25,000 in biennial dues and South Coast AQMD's participation in the Steering Committee for the next two Fiscal years. Projects or efforts funded by the Partnership include event sponsorships such as the ACT Expo and the ReThink Methane Symposiums; enhancing and maintaining the Partnership's website; co-funding research papers to assess the in-state production of renewable natural gas and its overall carbon intensity relative to transportation fuel for new near zero NOx emission natural gas powered heavy-duty vehicles. The next two Fiscal year period is expected to result in significantly more effective and strategic messaging efforts from the Partnership.

Technology Assessment and Transfer/Outreach

08210: Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities

Contractor: Sawyer Associates	South Coast AQMD Cost-Share	$ 15,000
Term: 02/28/18 – 02/28/22	Total Cost:	$ 15,000

The Office of Science and Technology Advancement (STA) augments in-house expertise with consultants who perform through level-of-effort technical assistance contracts. Under this contract executed in 2008, Dr. Robert F. Sawyer provides technical assistance to further develop and refine the mobile source control measures. In addition, he provides assistance in air toxics control measures, review of South Coast AQMD programs such as the Clean Fuels projects, input to greenhouse gas and energy diversity policies, and state regulatory activities, such as the ZEV and ZBus regulations. Dr. Sawyer is the former Chairman of the California Air Resources Board and has over 50 years of domestic and international experience specializing in automotive emissions, alternative fuels, air pollution and

environmental issues. He has additional experience in air pollution regulatory policy advising. Dr. Sawyer is a Professor of the Graduate School and the Class of 1935 Professor of Energy Emeritus at the University of California at Berkeley and a Visiting Professor of Energy and Environment at University College London. Dr. Sawyer serves on the Clean Fuels Advisory Committee.

12376: Technical Assistance with Alternative Fuels, Biofuels, Emissions Testing & Zero-Emission Transportation Technology

Contractor: University of California, Riverside/CE-CERT	South Coast AQMD Cost-Share	$ 150,000
Term: 06/13/14 – 05/31/22	Total Cost:	$ 150,000

South Coast AQMD seeks to implement aggressive programs to develop and demonstrate pre-commercial technologies for low- and zero-emission vehicles and equipment, alternative fuels, and renewable energy sources. Due to constant and rapid changes in technologies and the sheer breadth of potential projects, South Coast AQMD supplements in-house technical resources with outside expertise and assistance to evaluate and implement these demonstration projects. The College of Engineering/Center for Environmental Research and Technology (CE-CERT) is a research center at University of California Riverside dedicated to research on air quality and energy efficiency with approximately 120 investigators including 30 Ph.D. level researchers. CE-CERT will provide technical expertise to evaluate a broad range of emerging technologies in alternative and/or renewable fuels and vehicles as well as to conduct air pollution formation and control studies.

19078: Technical Assistance with Alternative Fuels, EVs, Charging and Infrastructure, and Renewable Energy

Contractor: Green Paradigm Consulting, Inc.	South Coast AQMD Cost-Share	$ 50,000
	Cosponsors:	
	California Air Resources Board *(received as pass-through funds into Fund 67)*	161,800
Term: 09/07/18 – 09/30/22	Total Cost:	$ 211,800

The South Coast AQMD relies on expert input, consultation and support to manage various efforts conducted under the Clean Fuels Program and TAO's many incentive programs. Green Paradigm Consulting, Inc., (GPCI) is providing technical assistance with alternative fuels, renewable energy and electric vehicles as well as outreach activities to promote, assess, expedite and deploy the development and demonstration of advanced, low and zero emissions mobile and stationary technologies. This contract is for technical and administrative support for the CARB Greenhouse Gas Reduction Fund (GGRF) Zero Emission Drayage Truck Project. In CY 2020, CARB funding was allocated to GPCI to assist in putting together quarterly progress reports, processing of invoices and supporting documentation, and reimbursement requests by funding agencies and partners.

20265: Technical Assistance with Heavy-Duty Vehicle Emissions Testing, Analyses & Engine Development & Applications

Contractor: Eastern Research Group	South Coast AQMD Cost-Share	$ 50,000
Term: 06/17/20 – 06/15/22	Total Cost:	$ 50,000

To promote, assess, expedite and deploy the development and demonstration of advanced, zero and near-zero emissions mobile and stationary technologies, South Coast AQMD relies on expert input and consultation. Eastern Research Group has experience and capabilities in conducting both dynamometer and in-use emissions measurements. As well as being a multi-service consulting firm that focuses on transportation, energy, environmental, economic and outreach solutions, Eastern Research Group has experienced staff with extensive qualifications in clean fuel transportation technology research, development, demonstration, planning and implementation, covering current and emerging alternative fuels and advanced propulsion technologies. Eastern Research Group has been providing support over three decades to transportation programs across the country seeking to improve air quality through advanced fuel and technology introduction, mitigation strategy implementation, and end user outreach and communication.

Various: Cosponsor 8 Conferences, Workshops and Events plus 3 Memberships

Contractor: Various	South Coast AQMD Cost-Share	$ 141,960
	Cosponsors	
	Various	2,029,000
Term: 01/01/20 – 12/31/20	Total Cost:	$ 2,170,960

The South Coast AQMD regularly participates in and hosts or cosponsors conferences, workshops and miscellaneous events. In CY 2020, South Coast AQMD provided funding for 8 conferences, workshops and events and 3 memberships in key stakeholder organizations, as follows: Clean Fuels Advisory Group Retreat in January and September 2020; the 2030 California Transportation Future Summit in March 2020; Hydrogen and Fuel Cells for Freight Workshop in March 2020; the PEMS Conference in March 2020; the ACT Virtual Event Series from August through November 2020; the Breath of Life Awards Virtual Gala in September 2020; the High Power Charging for Commercial Vehicles Event in September 2020; and the Renewable Gas 360 Symposium and Webinar Series from June 2020 through February 2021. Additionally, for 2020, three memberships were renewed for participation in the California Hydrogen Business Council, a member-based association representing a wide array of organizations that acts as a leading advocate for the hydrogen and fuel cell industry; Calstart, a nonprofit organization working nationally and internationally with businesses and governments to develop clean, efficient transportation solutions; and Veloz, a nonprofit organization comprised of high-powered, diverse board members uniquely qualified to accelerate the shift to electric vehicles through public-private collaboration, public engagement and policy education innovation.

Direct Pay: Procure Outreach Materials

Contractor: Prizm Imaging	South Coast AQMD Cost-Share	$ 1,848
Term: 01/01/20 – 12/31/20	Total Cost:	$ 1,848

South Coast AQMD's Technology Advancement Office offers funding for research, development, demonstration and deployment of transformative transportation technologies, incentive funding to accelerate fleet turnover of both on- and off-road transportation, and rebates for residential electric lawn mowers and home EV charging, among other programs. Technology assessment and outreach efforts are a small but essential part of any effective program. It is important to inform potential stakeholders and educate the public about South Coast AQMD's technology advancement efforts toward reducing pollutants and ensuring public health. In 2020, high performance vinyl decals were procured to show South Coast AQMD's support and participation of the numerous truck projects being demonstrated and deployed.

Direct Pay: Alternative Fuel Demonstration Vehicle Program Expenses

Contractor: Various	South Coast AQMD Cost-Share	$ 229
Term: 01/01/20 – 12/31/20	Total Cost:	$ 229

The South Coast AQMD alternative fuel vehicle demonstration program showcases new clean-fuel vehicles to public and private organizations so that potential purchasers may familiarize themselves with available low-emission technologies and to push the development of even cleaner vehicle technologies. This direct pay covers cost of service for one Honda Fuel Cell Clarity.

CLEAN FUELS PROGRAM
Progress and Results in 2020

Key Projects Completed

Given the large number and diversity of emission sources contributing to the air quality problems in the Basin, there is no single technology or "silver bullet" that can solve all the region's problems. Only a portfolio of different technologies can successfully achieve the required emission reductions needed to meet the upcoming 2023 and 2032 air quality standards as well as the state's 2050 climate goals. Therefore, the South Coast AQMD continues to support a wide range of advanced technologies, addressing not only the diversity of emission sources, but also the time frame to commercialization of these technologies. Projects cofunded by the South Coast AQMD's Clean Fuels Program include emission reduction demonstrations for both mobile and stationary sources, although legislative requirements limit the use of available Clean Fuels funds primarily to on-road mobile sources. The projects funded not only expedite the development, demonstration and commercialization of zero and near-zero emission technologies and fuels, but also demonstrate the technical viability to technology providers, end-users and policymakers.

In the early years, the mobile source projects funded by the Clean Fuels Program targeted low emissions technology developments in automobiles, transit buses, medium- and heavy-duty trucks and off-road applications. Over the last several years, the focus has shifted to near-zero and zero emission technologies for medium- and heavy-duty trucks, especially those in the goods movement and freight handling industry.

Table 6provides a list of 30 projects and contracts completed in 2020. Summaries of the completed technical projects are included in Appendix C. Selected projects completed in 2020 which represent a range of key technologies from near-term to long-term are highlighted below: (a) Low NOx Diesel Development Project; and (b) Assessment of the Air Quality and Greenhouse Gas Impacts of a Microgrid-Based Electricity System.

Low NOx Diesel Development Project

CARB initiated a three phase comprehensive study to support the current Omnibus legislation involving lower emissions standards for on-road heavy-duty vehicles and the EPA Cleaner Trucks Initiative. The original Stage 1 CARB Low NOx Demonstration Program provided an initial demonstration of the feasibility of technologies for achieving a target tailpipe NOx level of 0.02 g/hp-hr on a diesel engine platform. The second stage involved developing low- load cycles for heavy-duty diesel engines.

Phase 1 incurred a significant fuel penalty due to the engine architecture using a mini- burner and waste heat recovery. As a follow-up to these earlier programs, CARB and South Coast AQMD launched a second diesel demonstration program, the Stage 3 Low NOx Demonstration Program. The Stage 3 program focused on answering two major questions:

1. Could Low NOx levels be achieved at a smaller fuel consumption penalty?
2. Could a different and more efficient system be designed to target 0.02 NOx levels?

Significant contributions to the program came from the Port of Los Angeles, South Coast AQMD, MECA, CARB, and the US EPA.

The first task in the South Coast AQMD program was the development of a modified engine calibration that would enable an advanced aftertreatment system to reach Low NOx levels. This modified calibration was incorporated into cylinder deactivation (CDA) resulting in improved fuel efficiency and maintaining a significant increase in exhaust temperatures. Engine-out NOx during the aftertreatment warm-up period

was successfully controlled. Leveraging CDA allowed this to be done with only a small impact on cold-start GHG, while hot-start GHG levels showed a benefit compared to baseline. Following an extensive evaluation of candidate aftertreatment technologies and configurations, a final configuration was chosen, which is shown in Figure 13.

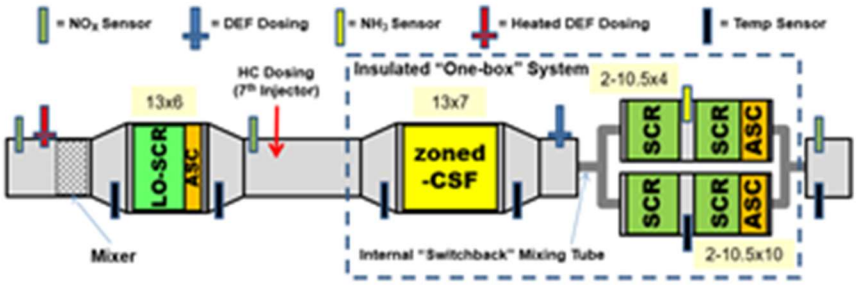


Figure 13: Final Stage 3 Aftertreatment Configuration Down-selected from Evaluation

This configuration employed both a close-couple light-off Selective Catalytic Reduction (LO-SCR) and a downstream system featuring dual Diesel Exhaust Fluid (DEF) dosers, including a heated upstream dosing unit. An advanced controls system was implemented on the engine including state-of-the-art model-based dosing controls, and an integrated state-based strategy controller. The final system was calibrated to minimize NOx emissions, while at the same time maximizing efficiency and controlling GHG emissions. The final calibration was demonstrated on a system that was hydrothermally aged to represent a full useful life of 435,000 miles. The resulting performance levels are shown in Figure 14. The system was able to reach tailpipe NOx levels below 0.02 g/hp-hr on the federal test procedure (FTP) and Ramped Modal Cycle Supplemental Emissions Test (RMC-SET), and at 0.06 g/hp-hr for the Low Load Cycle (LLC). Further testing is expected to lower these emissions further to achieve near- zero NOx certification.

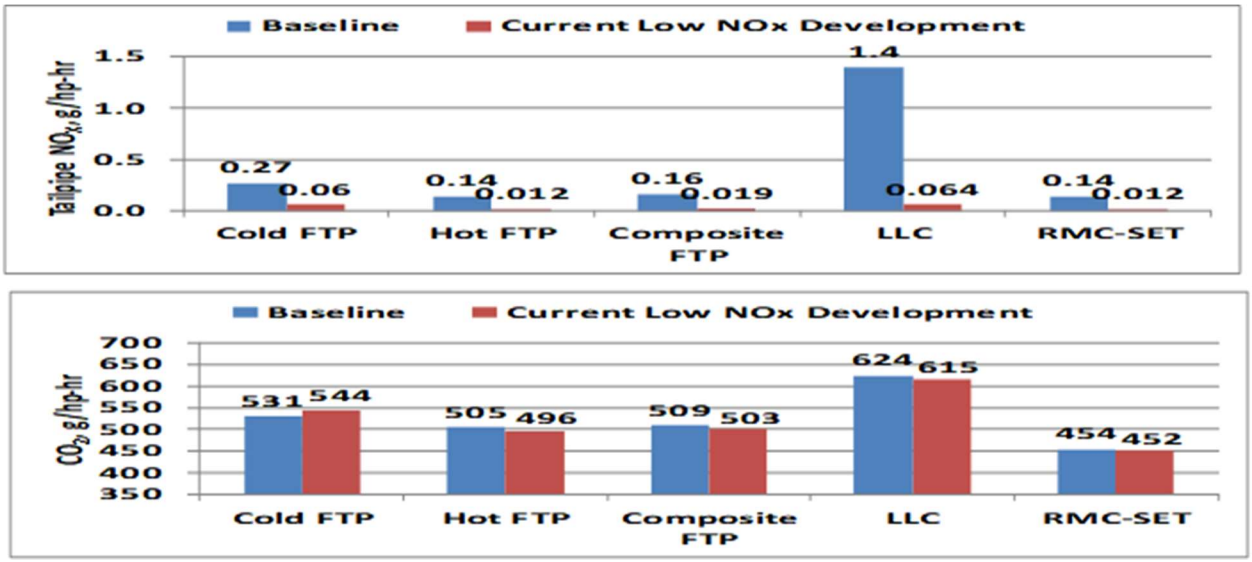


Figure 14: Performance Levels Demonstrated at the end of South Coast AQMD Funded Development on Hydrothermally Aged FUL parts (435,000 miles equivalent)

The Low NOx configuration developed in this program has been tested over current regulatory cycles, the new LLC, and field cycles. The system has shown the potential for NOx emission control under a wide variety of application cycles, while maintaining GHG emissions, and in some cases showing improvements. Several technology elements such as heated dosing and heated catalysts are now available for the engine and aftertreatment system and are likely to be incorporated in future on-highway engines to meet Low NOx standards.

Assessment of the Air Quality and Greenhouse Gas Impacts of a Microgrid-Based Electricity System

The development of microgrids is gaining attention as a means of increasing the resilience and reliability of the electricity system, reducing criteria pollutant and greenhouse gas emissions of the electricity and transportation sectors, and increasing the deployment of renewable power generation resources in serving the electric load demand. The provision of electric service through microgrids has a number of potential advantages, including but not limited to:

- Reducing transmission losses and the need for transmission capacity and additional transmission lines to connect external generation
- Taking advantage of co-/poly-generation methods such as combined heat and power or district heating and cooling
- Allowing usage of otherwise stranded assets such as biogas and biomass
- Maintaining electric service in the event of an external grid outage
- Serving as a hub for grid-to-vehicle (G2V) charging and vehicle-to-grid (V2G) services for battery
- Electric vehicles, and hydrogen fueling for fuel cell electric vehicles and V2G services for plug-in fuel cell electric vehicles.

As microgrids become prevalent, capacity for electricity generation which was previously outside the Basin will be retired and replaced with new capacity inside of the Basin. The potential of microgrids to substantially reduce the criteria pollutant emissions in southern California depend entirely on the design of the microgrids. When microgrids are used to support alternative transportation refueling (electric and hydrogen) the emission reduction benefits are increased. This project is the first to explore microgrid design features that facilitate zero emission of both criteria pollutant and greenhouse gasses with a focus on the following three tasks.

Task 1. Fuel Cell Technology for Industrial and Petroleum Refinery Microgrids

Two different types of fuel cells are considered in this work: Solid Oxide Fuel Cells (SOFC) and Molten Carbonate Fuel Cells (MCFC). Two approaches individually and in combination are considered: 1) greenfield applications where SOFC replace a productive process, e.g., power plant, steam methane reforming (SMR); and 2) retrofit applications, with MCFC assumed to be placed downstream of exhaust gas streams as a post-combustion system, which would involve every source of emissions.

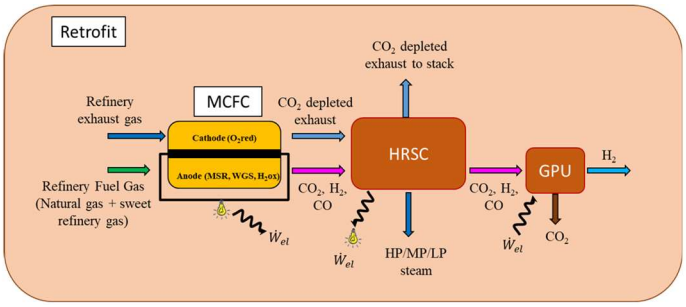


Figure 15: Retrofit configuration using MCFCs (HRSC: Heat Recovery Steam Cycle; GPU: Gas Processing Unit; MSR: Methane Stream Reforming; WGS: Water Gas Shift)

Scenarios are assessed using detailed thermodynamic models to determine the feasibility and performance within the scenario configurations including emission reductions for a given refinery deployment scenario. Emission changes are then mapped to a 2035 emissions inventory quantitatively, and spatially and temporally resolved for the location and activity of all refineries in California. The Community Multi-scale Air Quality model (CMAQ) is then used to simulate chemistry and transport within the atmosphere to resolve impacts on primary and secondary pollutant concentrations including ozone and fine particulate matter (PM2.5) from fuel cell deployment. Using CMAQ, summer and winter meteorological episodes are evaluated to analyze the effects of changing emissions during high pollutant formation conditions in California.

Fuel cell systems can feasibility be integrated into petroleum refineries in various ways to achieve emission reductions for both pollutants and GHG, although challenges related to the complexity and scale of existing refineries require further study. Emission reductions for the scenarios in this work scale with the aggressiveness of fuel cell deployment from relatively minor up to 66% of total refinery NOx for the widespread use of MCFC. When applied to all refineries, the largest NOx reductions occur in northern California with lesser impacts in Basin. Conversely, reductions in other pollutants including VOC are greater in Basin relative to NOx, and more equivalent to those in northern California. The trends have AQ implications as both are precursor emissions for ozone and secondary PM2.5. Emission reductions translate to a range of possible AQ impacts. For an aggressive MCFC deployment, ozone reductions peak at -2.6 ppb. Improvements in PM2.5 for summer are substantial, exceeding 8 μg/m3 in the Basin and occurring in other regions of the State. Similarly, improvements reach 10 μg/m3 in winter in Basin. highlighting the importance of VOC emissions in secondary PM2.5 formation pathways.

Task 2. Assess the Emissions and Air Quality Impacts of Renewable Fuel Blending in the Natural Gas System

Determining the change in emissions from a fuel composition shift to H2 blends requires assessment of impacted combustion devices. UCI has developed and demonstrated a platform using in-lab testing and numerical modeling to investigate emissions and stabilities with different fuel compositions for combustion equipment. The platform was used to analyze the formation of NOx and CO when burning mixtures of NG with H2 in industrial applications including different configurations of turbine combustors, boiler burners, radiant tubes, and porous burners. Additionally, the same method was used to assess the combustion performance of residential and commercial appliances including cooktop, oven and broiler burners, central forced air furnaces, and water heaters. Additional devices not included in the previous work were assessed using a detailed review of the literature. Numerous aspects complicate a clear understanding of how H2 addition may effect emissions including numerous potential pathways and quantities of H2 production, the size and complexity of the NG system, how the diverse range of end-use sources may be affected, lack of available data, and others. Thus, assumptions are made to feasibly develop scenarios and should be considered in interpreting the results including:

- Scenarios assume 5%, 16%, and 20% by volume H2 blending in the NG system
- Blends are perfectly mixed throughout the entire NG system in California
- End-use devices are not optimized for operation on H2/NG blends
- Only stationary sources are impacted
- Only NOx and CO are impacted

Emission changes are mapped to a 2035 emissions inventory quantitatively, and spatially and temporally resolved for the location and activity of end-use equipment. The Community Multi-scale Air Quality model (CMAQ) is then used to simulate chemistry and transport within the atmosphere to fully resolve impacts on primary and secondary pollutant concentrations including ozone and fine particulate matter (PM2.5) from H2 blending. Using CMAQ, summer and winter meteorological episodes are evaluated to analyze the effects of changing emissions during high pollutant formation conditions in California. In addition to the assumptions listed above, scenarios are defined by decisions regarding the mapping of NG-consuming boilers, steam generators, and equipment included in the emission inventory as “Other”. To establish a range of impacts (both positive and negative) a “Best Case” and “Worst Case” for each H2 blend level is established. Projected impacts on state-wide NOx range from a 6% decrease to a 4% increase demonstrating the range of effects from transitions in NG system fuel composition and the lack of current understanding of many important factors that will ultimately determine the real-world effects.AQ impacts follow suit, e.g., ozone changes vary from -2.4 to +1.6 ppb in the 20% Best and Worst Cases, respectively. Spatially, the largest impacts occur in the Basin with importance given the large populations and currently degraded AQ.

Similar impacts are noted for PM2.5 in winter and summer with peak changes in the Central Valley and Basin with similar importance.

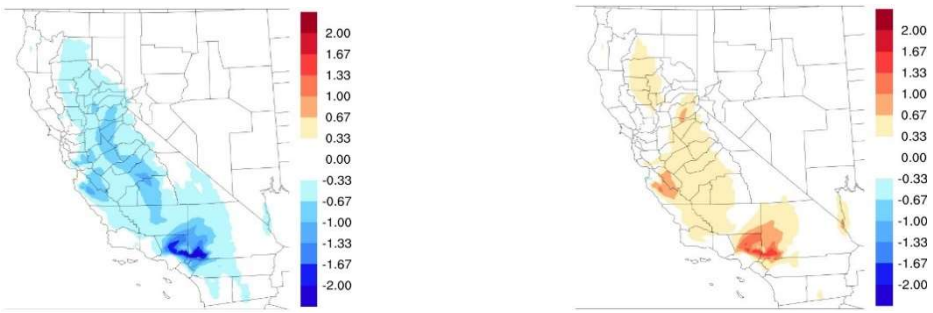


Figure 16: Difference in summer MD8H ozone (ppb) for the 20% Best Case(left) and the 20% Worst Case(right)

Task 3. Comparative Study on Environmental-Economic Impacts of Fuel Cell and Battery-Electric Buses within a Microgrid

As zero-emission vehicles increase, the development of microgrids is critical as a means of increasing the resilience and reliability of the electricity system, increasing the deployment of renewable power generation resources in serving the electric load demand, and serving as a hub for the merging of the electricity and transportation sectors, which together represent the major source of criteria pollutant emissions. The wider deployment of battery electric and fuel cell electric heavy-duty vehicles has already started, and it is expected that their penetration will increase energy demand for their operation. Therefore, it is essential to coordinate charging/fueling of these vehicles, especially integrate these zero-emission vehicles in microgrids. Microgrids can enable improving the overall energy efficiency and integrating more and more zero-emission vehicles for fleet operators.

Figure 17: Anteater Express Zero-Emission Buses

Anteater Express is the first fully zero-emission fleet in the state of California, and the first transit agency in the country to have a mix of zero-emission buses (ZEBs) in operation with 20 battery electric buses (BEBs) and one fuel cell electric buses (FCEBs). The simultaneous operation of battery electric and hydrogen buses provides a unique opportunity to develop an evaluation framework under consistent conditions. The data collected from the fleet enabled a comprehensive comparison of the two technologies and were used in statistical analysis to assess the performance of ZEBs and assess impact of various factors on overall performance of different bus technologies.

Multiple models were developed in the project to determine a driving cycle representative of Anteater Express routes which was then used in the fuel efficiency model to compare energy consumption of various bus powertrains. A detailed Life Cycle Assessment (LCA) analysis was done to assess economic and environmental impact of different ZEBs, and a strategy was developed to optimize the technology-mix of the a zero-emission in order to help transit agencies transition to a zero-emission fleet without impacting their service and routes.

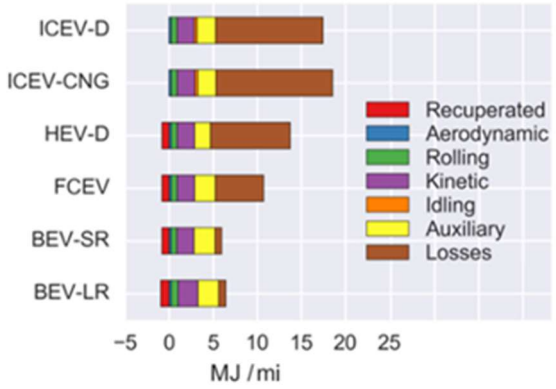


Figure 18: Energy Consumption per Mile for Various Powertrains

Results of the study include comparison of total cost of ownership, economic and environmental impacts, and overall assessment of FCEBs and BEBs. Environmental impacts included emissions criteria pollutants (NOx, PM) and greenhouse gases. Not only the tailpipe emissions are 100% eliminated the overall life-cycle emissions are also reduced with deployment of BEBs and FCEBs. The extend to reduction depends on the fuel pathways and delivery, but for similar pathways, BEBs have lower emissions.

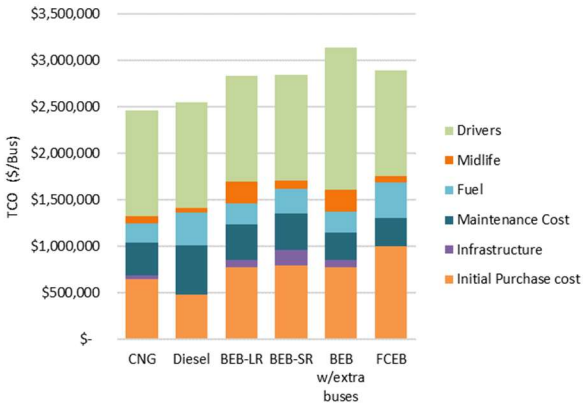


Figure 19: Total Cost Ownership for Various Powertrain Technology Buses

The use of fuel cell systems at industrial facilities can provide notable improvements in regional levels of ozone and PM2.5 which in turn will provide substantial benefits to human health within California. The addition of H2 may also provide important AQ co-benefits to sensitive urban regions. Conversely, care must be taken to avoid AQ worsening in those same areas. the overall criteria pollutant and greenhouse gases are reduced with the deployment of BEBs and FCEBs and has the potential to improve air quality as well as helping mitigate and reduce impacts of climate change.

Table 5: Projects Completed between January 1 & December 31, 2020

Contract	Contractor	Project Title	Date
Hydrogen/Mobile Fuel Cell Technologies and Infrastructure			
15609	ITM Power, Inc.	Installation of Riverside Rewenable Hydrogen Fueling Station	Jan 2020
15619	H2 Frontier, Inc.	Installation of Chino Renewable Hydrogen Station	Dec 2020
19191	University of California, Irvine	Development of Solid Oxide Fuel Cell and Gas Turbine (SOFC-GT) Hybrid Technology	Jun 2020
Engine Systems/Technologies			
17393	Southwest Research Institute	Development of an Ultra-Low Emission Diesel Engine for On-Road Heavy-Duty Vehicles	May 2020
18211	West Virginia University Innovation Corporation	Develop Thermal Management Strategy Using Cylinder Deactivation for Heavy-Duty Diesel Engines	Jun 2020
Electric/Hybrid Technologies and Infrastructure			
13433	US Hybrid Corporation	ZECT I : Develop and Demonstrate Two Class 8 Zero-Emission Electric Trucks	Mar 2020
14052†	Altec Capital Services, LLC	Lease of 2 PHEVs	Jan 2020
16022	Gas Technology Institute	ZECT II - Develop & Demonstrate One Class 8 CNG Hybrid Electric Drayage Truck	Nov 2020
16046	Transportation Power, Inc.	ZECT I - Develop & Demonstrate Two Class 8 CNG Plug-In Hybrid Electric Drayage Trucks	Mar 2020
17029	University of California, Irvine	Demonstration and Evaluation of Plug-In Smart Charging at Multiple Electric Grid Scales	Dec 2020
18122	Clean Energy	Southern California Trucking Demonstration of Near-Zero ISX12N Beta Engines	Jan 2020
Fueling Infrastructure and Deployment (NG/RNG)			
12667	West Covina Unified School District	Upgrade CNG Fueling Station	Mar 2020
16075	City of Desert Hot Springs	Purchase 1 Heavy-Duty CNG Powered Truck	Mar 2020
16244†	CR & R, INC.	Renewable Natural Gas Production & Vehicle Demonstration Project	Mar 2020
Fuel/Emissions Studies			
15680	National Renewable Energy Laboratory	Develop Detailed Technology and Economics Based Assessment for Heavy-Duty Advanced Technology Development	Jun 2020
17277	University of Southern California	Conduct Market Analysis for Zero-Emission Heavy-Duty Trucks in Goods Movement	Feb 2020
18206	University of California, Irvine	Assess Air Quality and Greenhouse Gas Impacts of a Microgrid-Based Electricity System in Southern California	Jun 2020

Table 5: Projects Completed Between January 1 & December 31, 2020 (cont'd)

Contract	Contractor	Project Title	Date
Emissions Control Technologies			
17278	University of Southern California	Develop Freight Loading Strategies for Zero-Emissions Heavy-Duty Trucks in Goods Movement	Feb 2020
Technology Assessment and Transfer/Outreach			
12453†	TECH COMPASS	Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis, and Aftertreatment Technologies	May 2020
16200	California State University, Los Angeles	Cosponsor Regional Universities for US DOE EcoCAR 3 Competition	Apr 2020
20046†	RadTech International	Cosponsor the RadLaunch Program	Jun 2020
20098†	Coordinating Research Council, Inc.	Cosponsor the 30th Real World Emissions Workshop	Apr 2020
20104†	Gladstein, Neandross & Associates LLC	Cosponsor the 2020 Renewable Gas 360 Symposium	Feb 2020
20233†	California Hydrogen Business Council	Cosponsor the CA Hydrogen & Fuel Cell Summit	Mar 2020
20264†	CALSTART, Inc.	Cosponsor the 2030 California Transportation Future Summit	Jun 2020
21079†	Gladstein, Neandross & Associates LLC	Cosponsor 2020 ACT Virtual Event Series	Dec 2020
21093†	BREATHE California Of Los Angeles County	Cosponsor 2020 Breath of Life Awards Virtual Gala	Oct 2020

†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.

CLEAN FUELS PROGRAM

2021 Plan Update

In 1988, SB 2297 (Rosenthal) was signed into law (Chapter 1546) establishing South Coast AQMD's Clean Fuels Program and reaffirming the existence of the Technology Advancement Program (TAO) to administer the Clean Fuels Program. The funding source for the Clean Fuels Program is a $1 motor vehicle registration surcharge that was originally approved for a limited five-year period, but legislation eventually extended both the Program and surcharge indefinitely. The Clean Fuels Program has evolved over the years but continues to fund a broad array of technologies spanning near- and long-term implementation. Similarly, planning will remain an ongoing activity for the Clean Fuels Program, which must remain flexible to address evolving technologies as well capitalize on the latest progress in technologies, research areas and data.

Every year, South Coast AQMD re-evaluates the Clean Fuels Program to develop a Plan Update based on reassessment of clean fuel technologies and direction of the South Coast AQMD Board. This Plan Update for CY 2021 targets several projects to achieve near-term emission reductions needed for the South Coast to meet health-based NAAQS.

Overall Strategy

The overall strategy of TAO's Clean Fuels Program is based on emission reduction technology needs identified through the AQMP process and South Coast AQMD Board directives to protect the health of the approximately 18 million residents (nearly half the population of California) in the Basin. The AQMP, which is updated approximately every four years, is the long-term regional "blueprint" that relies on fair-share emission reductions from all jurisdictional levels (e.g., federal, state and local). The 2016 AQMP is composed of stationary and mobile source emission reductions from traditional regulatory control measures, incentive-based programs, projected co-benefits from climate change programs, mobile source strategies and reductions from federally regulated sources (e.g., aircraft, locomotives and ocean-going vessels).

The emission reductions and control measures in the 2016 AQMP rely on commercial adoption of a mix of currently available technologies as well as the expedited development and commercialization of clean fuel mobile and stationary advanced technologies in the Basin to achieve air quality standards. The 2016 AQMP identifies a 45 percent reduction in NOx required by 2023 and an additional 55 percent reduction by 2031 to achieve ozone standards of 80 ppb and 75 ppb, respectively. The majority of these NOx reductions must come from mobile sources, both on- and off-road. Notably, South Coast AQMD is currently only one of two regions in the nation designated as an extreme nonattainment area (the other region is San Joaquin Valley). Furthermore, in April 2019, South Coast AQMD requested a voluntary re-classification from U.S. EPA of the 1997 8-hour federal standard ozone for Coachella Valley to "extreme" status. Hotter summer months and climate change in the region have presented challenges that require additional time to reach attainment.

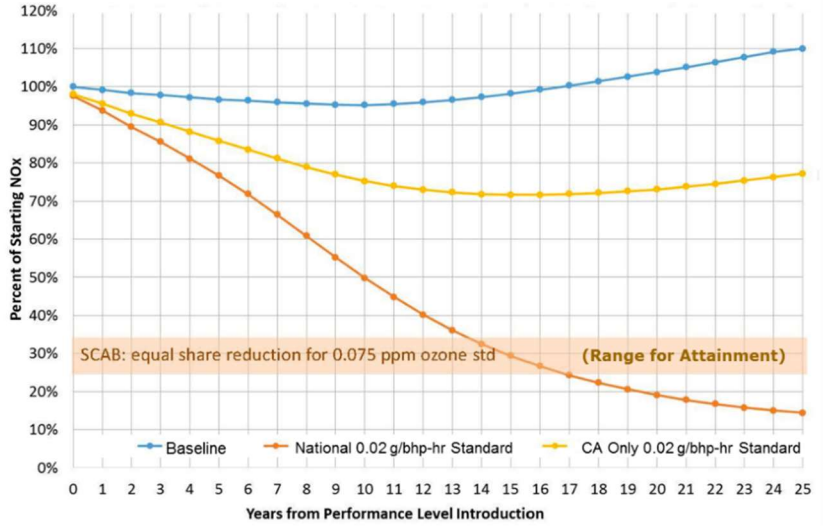
While current state efforts in developing regulations for on- and off-road vehicles and equipment are expected to reduce NOx emissions significantly, they will be insufficient to meet South Coast AQMD needs, particularly in terms of timing. The 2016 AQMP identified a means to achieving the NAAQS through regulations and incentives for near-zero and zero emission technologies that are commercial or nearing commercialization. This strategy requires a significantly lower state and national heavy-duty truck

engine emissions standard with the earliest feasible implementation date, significant additional financial resources, and accelerated fleet turnover on a massive scale.

On June 3, 2016, in light of the need for a more stringent national heavy-duty truck engine emissions standard to achieve mobile source emission reductions, South Coast AQMD petitioned the U.S. EPA to initiate rulemaking for a lower national NOx standard for heavy-duty engines. A national NOx standard (as opposed to a California standard) for on-road heavy-duty vehicles is estimated to result in NOx emission reductions from this source category from 70 to 90 percent in 14 to 25 years, respectively. While CARB has adopted more stringent in-use fleet rules which require older trucks and buses to upgrade to newer, cleaner engines meeting the 2010 standard of 0.2 g/bhp-hr by 2023, CARB estimates that 60 percent of total heavy-duty vehicle miles traveled in the Basin are from vehicles purchased outside of California. This points to the need for a more stringent federal as well as state standard for on-road heavy-duty vehicles.

Given that the Basin must attain the 75-ppb ozone NAAQS by 2031, a new on-road heavy-duty engine NOx emission standard is critical given the time needed for OEMs to develop and produce compliant vehicles, and for national fleet turnover to occur.

Figure 20 shows the difference in NOx reductions from on-road heavy-duty trucks under three scenarios: baseline (no change in the low NOx standard) in blue, a low NOx standard adopted only in California in yellow, and lastly, a federal low NOx standard in orange.



Source: Presentation by Mr. Cory Palmer, ARB at the Symposium on California's Development of its Phase 2 Greenhouse Gas Emission Standards for On-Road Heavy-Duty Vehicles (April 22, 2015)

Figure 20: NOx Reduction Comparison: No New Regulations vs Low NOx Standard in California only vs National Standard

The U.S. EPA has since acknowledged a need for additional NOx reductions through a harmonized and comprehensive national NOx reduction program for heavy-duty on-highway engines and vehicles. On November 13, 2018, U.S. EPA announced the Cleaner Truck Initiative, and on January 6, 2020, they issued an Advance Notice of Proposed Rule to reduce NOx emissions from on-road heavy-duty trucks starting as early as model year 2026. However, CARB forged ahead, announcing its own Low NOx Omnibus rule, which was adopted by CARB Board in summer 2020. The new regulation will require lower NOx standard starting in model year 2024 a goal harmonize with U.S. EPA Cleaner Truck Initiative of a national NOx stand of 0.02 g/bhp-hr in 2027, 90% below today's NOx standard. Although both are welcome news, the

timing is too late to help the South Coast AQMD meet its 2023 federal attainment deadline. So, despite the milestone progress, commercialization and deployment of cost-effective near-zero engines are still needed to meet near-term goals.

The findings from the MATES IV[12] study (May 2015), which included local scale studies near large sources such as ports and freeways, reinforced the importance of the need for transformative transportation technologies, especially near the goods movement corridor to reduce NOx emissions. In mid-2017, South Coast AQMD initiated MATES V to update the emissions inventory of toxic air contaminants, as well as modeling to characterize risks, including measurements and analysis of ultrafine particle concentrations typically emitted or subsequently formed from vehicle exhaust. The MATES V report is expected to be finalized by early 2021. In the meantime, U.S. EPA approved the use of the CARB EMFAC 2017 model for on-road vehicles for use in the State Implementation Plan and transportation conformity analyses, which assesses emissions from on-road vehicles including cars, trucks and buses. The off-road model, which assesses emissions from off-road equipment such as yard tractors, top handlers, and rubber tire gantry cranes, is being replaced by category specific methods and inventory models being developed for specific regulatory support projects.

A key strategy of the Clean Fuels Program, which allows significant leveraging of Clean Fuels funding (historically $4 to every $1 of Clean Fuels funds), is its public-private partnerships with private industry, technology developers, academic institutions, research institutions and government agencies. Since 1988, the Clean Fuels Program provided more than $340 million toward projects exceeding $1.5 billion. In 1998, South Coast AQMD's Carl Moyer Program was launched. The two programs produce a unique synergy, with the Carl Moyer Program (and other subsequent incentive programs) providing the necessary funding to push market penetration of technologies developed and demonstrated by the Clean Fuels Program. This synergy enables South Coast AQMD to act as a leader in technology development and commercialization efforts targeting reduction of criteria pollutants. Since the Carl Moyer Program began in 1998, South Coast AQMD has implemented other incentive programs (i.e., Volkswagen Mitigation, Proposition 1B-Goods Movement, Community Air Protection Program and Voucher Incentive Program), currently with cumulative funding of $250 million annually. The 2016 AQMP also included control measures to develop indirect source regulations and strengthen the fleet rules to take advantage of incentives to further accelerate emission reductions.

Despite several current California incentive programs to deploy cleaner technologies and offset the higher procurement costs of cleaner technologies, significant additional resources are still needed for the scale necessary to achieve the NAAQS for this region. Meanwhile, South Coast AQMD is seeking to commercialize alternative low-NOx technologies that do not rely on incentives by providing customer fuel savings with low payback periods. There are serval emerging key technology that will provide the NOx and GHG co-benefit which might no longer require vehicle purchase incentives.

As technologies move towards commercialization, such as heavy-duty battery electric trucks, the Clean Fuels Program has been able to partner with large OEMs, such as Daimler and Volvo to deploy these vehicles in large numbers. These OEM partnerships allow the Program to leverage their research, design, engineering, manufacturing, sales and service, and financial resources that are needed to move advanced technologies from the laboratories to the field and into customers' hands. The OEMs have the resources to develop advanced technology vehicles such as battery electric and hydrogen fuel cells, manufacture in large quantities and distribution network to support sales across the state. To obtain the emission reductions needed to meet NAAQS, large numbers of advanced technology clean-fueled vehicles must be deployed across our region and state.

[12] http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7

Figure 21 outlines a developmental progression for technology demonstration and deployment projects funded by the Clean Fuels Program and the relationship incentive programs administered by TAO play in that progression. The South Coast AQMD's Clean Fuels Program funds various stages of technology projects, typically ranging from Technology Readiness Levels 3-8, to provide a portfolio of technology choices and to achieve near-term and long-term emission reduction benefits.

Figure 21: Technology Readiness Levels

While the state continues to focus their attention on climate change (GHG reductions), South Coast AQMD remains committed to achieving NOx reductions. Many of the technologies that address the Basin's needed NOx reductions align with the state's GHG reduction efforts. In 2016, U.S. EPA noted that the transportation sector contributed 28 percent of overall GHG emissions. Due to these co-benefits, South Coast AQMD has been successful in partnering with the state and public/private partnerships to leverage its Clean Fuels funding extensively.

Program and Funding Scope

This 2021 Plan Update includes projects to research, develop, demonstrate and advance deployment (RD^3) a variety of technologies, from near-term to long-term, that are intended to address the following challenges:

1) implementation of new and changing federal requirements, such as the more stringent federal 8-hour ozone standard of 70 ppb promulgated by U.S. EPA in late 2015;
2) implementation of new technology measures by including accelerated development of technologies nearing commercialization and deploying commercially ready technologies; and
3) continued development of near-term cost-effective approaches and long-term technology development.

The overall scope of projects in the 2021 Plan Update needs to remain sufficiently flexible to address new technologies and control measures identified in the 2016 AQMP, dynamically evolving technologies, and new research and data. The latter might include findings from MATES V and revised emission inventories in EMFAC 2017.

Within the core technology areas defined later in this section, project objectives range from near term to long term. The South Coast AQMD Clean Fuels Program concentrates on supporting development, demonstration and technology commercialization and deployment efforts rather than fundamental research. The nature and typical time-to-product for Clean Fuels Program projects are described below, from near term to long term.

- *Deployment* or technology *commercialization* efforts focus on increasing utilization of clean technologies in conventional applications, promising immediate and growing emission reduction benefits. These are expected to result in commercially available products as early as 2020, including obtaining required certifications from CARB and U.S. EPA. It is often difficult to transition users

to non-traditional technologies or fuels due to higher incremental costs or required changes to user behavior, even if these technologies or fuels offer significant benefits. In addition to government's role to reduce risk by funding technology development and testing, it is also necessary to offset incremental costs through incentives to accelerate the use of cleaner technologies. The increased use of these clean fuel technologies also depend on efforts to increase stakeholder confidence that these technologies are viable and cost-effective in the long term.

- Technologies ready to begin field *demonstration* in 2021 are expected to result in commercially available products in the 2023-2025 timeframe, and technologies being demonstrated generally are in the process of being certified by CARB and U.S. EPA. Field demonstrations provide a controlled environment for manufacturers to gain real-world experience and address end-user issues that arise prior to the commercial introduction of the technologies. Field demonstrations provide real-world evidence of performance to allay any concerns by early adopters.
- Finally, successful technology *development* projects are expected to begin during 2021 with duration of two or more years. Additionally, field demonstrations to gain long term verification of performance may also be needed prior to commercialization. Certification and commercialization would be expected to follow. Development projects identified in this plan may result in technologies ready for commercial introduction as soon as 2021-2025. Projects may involve the development of emerging technologies that are considered long-term and higher risk, but with significant emission reductions potential. Commercial introduction of such long-term technologies would not be expected until 2026 or later.

Core Technologies

The following technologies have been identified as having the greatest potential to enable the emission reductions needed to achieve NAAQS and thus form the core of the Clean Fuels Program.

The goal is to fund viable projects in all categories. However, not all project categories will be funded in 2021 due to funding limitations, and the focus will remain on control measures identified in the 2016 AQMP, with consideration for availability of suitable projects. The project categories identified below are appropriate within the context of the current air quality challenges and opportunities for technology advancement.

Within these areas, there is significant opportunity for South Coast AQMD to leverage its funds with other funding partners to expedite the demonstration and deployment of clean fuel technologies in the Basin. A concerted effort is continually made to form public private partnerships to maximize leveraging of Clean Fuels funds.

Several of the core technologies discussed below are synergistic. For example, a heavy-duty vehicle such as a transit bus or drayage truck, may utilize a hybrid electric drive train with a fuel cell operating on hydrogen fuel or an internal combustion engine operating on an alternative fuel as a range extender. Elements of the core hybrid electric system may overlap.

Priorities may shift during the year in keeping with the diverse and flexible "technology portfolio" approach or to leverage opportunities such as cost-sharing by the state or federal government or other entities. Priorities may also shift to address specific technology issues which affect residents within the South Coast AQMD's jurisdiction. For example, AB 617, signed by the Governor in mid-2017, will implement actions designated in CERPs by five AB 617 communities within the South Coast region, and additional flexibility will be needed to develop new strategies and technologies for those disadvantaged communities.

The following nine core technology areas are listed by current South Coast AQMD priorities based on the goals for 2021.

Hydrogen/Mobile Fuel Cell Technologies and Infrastructure

The South Coast AQMD supports hydrogen infrastructure and fuel cell technologies as one option in the technology portfolio. It is dedicated to assisting federal and state government programs to deploy light-, medium-, and heavy-duty fuel cell vehicles (FCV) by supporting the required hydrogen fueling infrastructure.

Calendar Years 2015-2019 were a critical timeframe for the introduction of hydrogen fueling infrastructure. In 2014, Hyundai introduced the Tucson FCV for lease. In 2015, Toyota commercialized the Mirai, the first FCV available to consumers for purchase. In December 2016, Honda started delivering its 2017 Honda Clarity FCV. Other commercially available FCVs include the Audi H-Tron Quattro, Chevrolet Colorado ZH2, Hyundai Nexo, Mercedes-Benz GLC F-Cell and Nissan X-Trail. With lead times on retail level hydrogen fueling stations requiring 18-36 months for permitting, construction and commissioning, plans for future stations need to be implemented. While coordination with the California Division of Measurement Standards (DMS) to establish standardized measurements for hydrogen fueling started in 2014, additional efforts to offer hydrogen for sale in higher volumes for light-duty vehicles are still needed. Changes to CARB's Low Carbon Fuel Standard (LCFS) regulation to provide credit for low carbon fuel capacity in addition to throughput should enable station operators to remain solvent during the early years until vehicle numbers ramp up. Lastly, a deliberate and coordinated effort is necessary to ensure that light-duty retail hydrogen stations are developed with design flexibility to address specific location limitations, robust hydrogen supply, and refueling reliability matching those of existing gasoline and diesel fueling stations. The current network of hydrogen fueling stations to support the current number of light-duty FCVs on the road is insufficient, and supply of hydrogen and additional hydrogen production continue to be challenges that need to be addressed.

In 2018, Former Governor Brown issued Executive Order (EO) B-48-18. Among other provisions, the order sets an additional hydrogen station network development target of 200 stations by 2025. Meeting this new ambitious target clearly requires accelerated effort on the part of the State to ensure its achievement. The EO additionally sets a target for 5 million ZEVs by 2030; FCVs are expected to comprise a significant portion of this future ZEV fleet. In September 2019, Governor Newsom issued EO N-19-19 on Climate Change, which directs CARB to push OEMs to produce even more clean vehicles, and to find ways for more Californians, including residents in disadvantaged communities, to purchase these vehicles on the new and used markets. CARB is tasked with developing new grant criteria for clean vehicle programs to encourage OEMs to produce clean, affordable cars and propose new strategies to increase demand in the primary and secondary markets for ZEVs. Finally, CARB is taking steps to strengthen existing or adopt new regulations to achieve GHG reductions within the transportation sector.

Fuel cells can play a role in medium- and heavy-duty applications where battery recharge time, although improving, is insufficient to meet fleet operational requirements. The CaFCP's 2030 Vision[13] released in July 2018 provides a broader framework for the earlier Medium- and Heavy-Duty Fuel Cell Electric Truck Action Plan completed in October 2016, which focused on Class 4 parcel delivery trucks and Class 8 drayage trucks with infrastructure development and established metrics for measuring progress.

As part of the $83 million Shore-to-Store project, for which the Clean Fuels Program committed $1 million, Toyota and Kenworth will deploy 10 Class 8 fuel cell trucks and Equilon (Shell) will build two large capacity hydrogen fueling stations in Wilmington and Ontario. Kenworth will leverage the development on the fuel cell truck demonstrated in South Coast AQMD's ZECT 2 project and integrate Toyota's fuel cells into the Kenworth trucks. These fuel cell trucks will be deployed at fleets including UPS, Total Transportation Services, Southern Counties Express, and Toyota Logistics Services at the Ports of Los Angeles and Port Hueneme, as well as other fleets in Riverside County. In 2019, Toyota displayed a second

[13]CaFCP's *The California Fuel Cell Revolution, A Vision For Advancing Economic, Social, and Environmental Priorities* (Vision 2030), September 4, 2018.

prototype Class 8 fuel cell truck at the Port of Long Beach, including plans for a new 1,000 kg/day heavy-duty hydrogen fueling station using hydrogen produced by a new tri-generation fuel cell.

Another player in the heavy-duty fuel cell truck space is Cummins who recently purchased Hydrogenics and EDI to develop fuel cell power trains. Cummins is currently working on the ZECT 2 and a CEC/South coast AQMD supported project that will develop and demonstrate fuel cell drayage trucks. Also, Volvo and Daimler this year announced a joint venture to develop fuel cell powered trucks. South Coast AQMD has created many alliances with the large OEM's and will continue to fund projects with these companies over the next year to develop heavy-duty fuel cell trucks.

The CaFCP *Fuel Cell Electric Bus Road* Map released in September 2019 supports implementation of CARB's Innovative Clean Transit and Zero Emission Airport Shuttle regulations. As part of the $46 million Fuel Cell Electric Bus Commercialization Consortium project, for which the Clean Fuels fund contributed $1 million, the Center for Transportation and Environment (CTE) partnered with New Flyer, Trillium, and Orange County Transportation Authority (OCTA) to deploy 10 40-foot New Flyer XHE40 fuel cell transit buses and install a liquid storage hydrogen station capable of fueling up to 50 fuel cell transit buses at OCTA. This project also deployed 10 fuel cell transit buses and a hydrogen station upgrade at Alameda-Contra Costa Transit District (AC Transit). The transit buses were delivered in December 2019 and liquid hydrogen station was completed in January 2020, and the demonstration and data collection period for the buses and station started in February 2020. SunLine Transit Agency was the recipient of a U.S. EPA Targeted Airshed grant in June 2020 to deploy five fuel cell transit buses, in addition to their existing fleet of 16 fuel cell and four battery electric transit buses and five buses that will be deployed by the end of 2020 as well as a recently upgraded 900 kg/day hydrogen station capable of supporting up to 30 fuel cell transit buses.

The 2021 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 from multiple providers, including energy stations with electricity and hydrogen co-production and higher pressure (10,000 psi) hydrogen dispensing and scalable/higher throughput;
- development of additional sources of hydrogen production and local generation of hydrogen for fueling stations far from local production sources to better meet demand of FCVs;
- 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 commercial harbor craft applications such as port cargo handling equipment, switcher locomotives and tugs;
- demonstration of fuel cell vehicles in controlled fleet applications in the Basin;
- development and implementation of strategies with government and industry to build increasing scale and renewable content 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;
- coordination with fuel cell vehicle OEMs to develop an understanding of their progress in overcoming barriers to economically competitive fuel cell vehicles and develop realistic scenarios for large scale introduction; and
- repurpose of fuel cells and hydrogen tanks for other, secondary energy production and storage uses, as well as reusing fuel cells and hydrogen tanks, and approaches to recycle catalysts and other metals.

Engine Systems/Technologies

To achieve the emissions reductions required for the Basin, internal combustion engines (ICEs) used in the heavy-duty sector will require emissions that are 90 percent lower than the 2010 standards as outlined in CARB's recently adopted Heavy-Duty On-Road "Omnibus" Low NOx regulation and EPA's Cleaner Trucks Initiative. In 2016, commercialization of the Cummins 8.9 liter (8.9L) natural gas engine achieving 90 percent below the existing federal standard was a game changer. The 8.9L engine works well in refuse and other vocational trucks as well as transit and school buses. In 2017, Cummins Westport Inc., with South Coast AQMD and other project partners, also achieved certification of the 12L natural gas engine. The 12L engine in Class 8 drayage trucks and 60-foot articulated transit buses is a further game changer. CARB and U.S. EPA certified both engines at 0.02 g/bhp-hr for NOx. New for 2020, Cummins certified its 6.7L natural gas engine to 0.02 g/bhp-hr NOx for the first time, further ensures viability of near-zero engine options for all market segments. For trucks that cannot utilize the Cummins near-zero emission engines, the 2021 Plan Update includes potential projects to develop, demonstrate and certify natural gas and propane engines in the 6-8L range. Although no near-zero emission diesel technology is commercially available today, South Coast AQMD has been working closely with CARB and others on defining technology pathways via several projects, including the Ultra-Low Emissions Diesel Engine Program at SwRI, opposed piston engine development with Achates Power Inc., and Thermal Management using Cycle Deactivation Project with West Virginia University. The 2021 Plan Update included on-road truck demonstrations for the SwRI as well as the Achates projects, these demonstration efforts are considered key milestones in driving up the TRL level toward full commercialization. CDA has proven to be a key engine enabling technology for controlling exhaust temperature and increasing efficiency. These demonstration projects, although not yet complete, show that near-zero emission diesel technologies are feasible via advanced engine and aftertreatment or optimized engine design and calibration. The Plan Update continues to incorporate pursuit of cleaner engines and hybrid powertrains for the heavy-duty sector. Future projects will support the development, demonstration and certification of engines and powertrains that can achieve these massive emission reductions using an optimized systems approach. In December 2018, South Coast AQMD participated in the Natural Gas Engine & Vehicle R&D Source Review Panel meeting in Sacramento to review, discuss and prioritize several natural gas engine and vehicle technology projects that increase efficiencies using advanced engines or hybrid drive trains.

The 2021 Plan includes potential projects that the South Coast AQMD might participate in with federal and state agencies towards these efforts. Specifically, these projects are expected to target the following:

- development of ultra-low emissions and improved higher efficiency natural gas engines for heavy-duty vehicles and high horsepower applications projects that move these technologies to a higher technology readiness level and eventual commercialization;
- continued development and demonstration of gaseous- and liquid-fueled, advanced fuels or alternative fuel medium-duty and heavy-duty engines and vehicles;
- development and demonstration of CNG hybrid vehicle technology;
- development and demonstration of diesel hybrid vehicle technology;
- development and demonstration of alternative fuel engines for off-road applications;
- evaluation of alternative engine systems such as hydraulic plug-in hybrid vehicles;
- development and demonstration of engine systems that employ advanced engine design features, cylinder deactivation, improved exhaust or recirculation systems, and aftertreatment devices; and
- development of low load and cold start technologies for hybrids and diesels where high-level emissions occur.

CARB and U.S. EPA's recent initiation to create national low NOx standard for on-highway heavy-duty engines will further motivate manufacturers to develop lower-NOx emitting technologies expected to result

in greater NOx emission reductions than a California only low NOx standard for on-road heavy-duty engines.

Electric/Hybrid Technologies and Infrastructure

In an effort to meet federal standards for PM2.5 and ozone, a primary focus must be on zero and near-zero emission technologies. A key strategy to achieve these goals is the wide-scale electrification of transportation technologies. South Coast AQMD supports projects to address concerns regarding cost, battery lifetime, electric range, charging infrastructure and OEM commitment. Integrated transportation systems can encourage further emission reductions by matching EVs to typical consumer and fleet duty cycles and demands. Additionally, the challenges of installing infrastructure both in terms of costs and construction impacts needs to be better understood.

There are separate challenges associated with light-duty electric vehicles (EVs) vs. medium- and heavy-duty EVs, which are on opposite ends of the commercialization spectrum. Light-duty EVs and charging infrastructure have long been commercially available and availability of public charging and costs to deploy infrastructure are the main challenges. Medium- and heavy-duty vehicles are becoming more commercially available, with Daimler and Volvo obtaining CARB certification of their Class 6 and/or 8 battery electric trucks in 2020. Standards for charging infrastructure to support medium- and heavy-duty vehicles has generally been with the CCS1 connector in North America, with Volvo and ABB obtaining UL certification of the CCS2 connector in 2020, which is a connector standard predominantly used in Europe and other parts of the world. There is also an agreed upon SAE J3068 connector standard for single-phase and three-phase AC charging. The challenges and costs of installing medium- and heavy-duty charging infrastructure are exponentially increased compared to light-duty infrastructure. Each year there are more commercially available options for medium- and heavy-duty on-road vehicles and off-road equipment, charging infrastructure to support these vehicles and equipment, and an ability to fund larger scale deployment projects for medium- and heavy-duty vehicles, equipment, and infrastructure.

This is especially important when the number of light-duty EVs continues to increase annually. As of Q2 2020, 723,045 and 1,556,058[14] new plug-in and battery electric vehicles were sold or leased in California and the U.S respectively. Greater adoption of EVs will increase significantly with the introduction of more vehicles with 200-plus mile range, such as the Tesla Model 3/S/X/Y, Jaguar i-PACE, Kia e-Niro, Hyundai Kona Electric, Mercedes Benz EQC, Audi e-tron, Nissan Leaf e Plus, Chevrolet Bolt, BMW i3, and Porsche Taycan Turbo.

The development and deployment of zero emission goods movement and freight handling technologies remains one of the top priorities for the South Coast AQMD to support a balanced and sustainable growth at the San Pedro Bay Ports as well as freight/logistics facilities throughout the Basin. The South Coast AQMD continues to work with our regional partners, including the San Pedro Bay Ports, Southern California Association of Governments (SCAG) and Los Angeles County Metropolitan Transportation Authority (Metro) to demonstrate and deploy technologies that are technically feasible, cost effective with the assistance of incentives and/or grant funding, and beneficial to all stakeholders. Specific technologies include zero emission trucks/freight handling equipment/infrastructure (battery and/or fuel cell), or plug-in hybrid powertrains, near-zero emission locomotives (e.g., 90% below Tier 4), electric locomotives using battery electric tender cars and catenary systems, and linear synchronous motors for locomotives and trucks. Additionally, the California Sustainable Freight Action Plan outlines a blueprint to transition the state's freight system to an environmentally cleaner, more efficient and economical system, including a call for a zero and near-zero emission vehicle pilot project in Southern California. The City of Los Angeles Zero Emission 2028 Roadmap 2.0 in preparation for the 2028 Olympics corroborates this effort, calling for an additional 25% GHG and criteria pollutant reductions. The San Pedro Bay Ports Clean Air Action Plan

[14]Veloz is a non-profit advocacy organization promoting light-duty electric vehicles. https://www.veloz.org/sales-dashboard/

calls for zero emissions cargo handling equipment by 2030 and zero emission drayage trucks by 2035, respectively.

New zero emission battery electric technology projects include: 1) deployment of 70 Volvo Class 8 battery electric drayage/freight trucks for the Switch-On project at up to five fleets in the Inland Empire and San Fernando Valley in Los Angeles funded by a $20 million U.S. EPA Targeted Airshed grant, 2) demonstration of two additional Class 8 battery electric drayage trucks as part of the Volvo LIGHTS project funded by a $500,000 U.S. EPA Clean Air Technology Initiative grant, 3) retrofit of six RTG cranes with hybrid electric engines at SSA Marine Terminal in the Port of Long Beach funded by a $2.5 million South Coast AQMD grant, and 4) Daimler Commercial Experience project to demonstrate eight Class 6 and 8 battery electric trucks and fast charging infrastructure funded by a $1 million South Coast AQMD grant.

Continued technology advancements in light-duty infrastructure have facilitated the development of corresponding codes and standards for medium- and heavy-duty infrastructure including the UL certification of the CCS2 connector for the Volvo LIGHTS battery electric truck demonstration project. Additionally, SCE's Charge Ready Transport Program and LADWP include funding for medium- and heavy-duty vehicles and infrastructure, and there is an upcoming joint CARB-CEC heavy-duty drayage truck deployment and infrastructure solicitation for $40 million towards a 50-truck deployment at a single drayage fleet.

Heavy-duty hybrid vehicles have historically been optimized for fuel economy, new generation hybrid powertrains that use a systems approach for co-optimizing both criteria emissions and fuel economy could provide another technology pathway to meet the air quality goals of the Basin. These hybrid systems in both plug-in and non-plug-in configurations, will focus on electrifying key engine subsystems and energy recovery to provide engine assistance during transient operations. Furthermore, the availability of additional electrical power such as 48-volt systems could allow for electric aftertreatment heaters for better transient control through thermo-management and therefore better NOx control. CARB adopted new test procedure for medium-duty and heavy-duty hybrid powertrains to certify to engine standards in CARB's proposed Heavy-Duty On-Road "Omnibus" Low NOx regulation. The new hybrid powertrain test procedures will properly credit for the fuel and emission benefits of hybrid vehicles via vehicle simulation on vehicle-based cycles and allow the entire powertrain system to certify to potentially lower emissions standards than traditional engine only tests. South Coast AQMD views these next generation hybrid powertrains can be deployed without the need for incentives by providing fuel economy benefits which could provide another potential cost-effective pathway for reducing NOx emissions in the near term.

Opportunities to develop and demonstrate technologies that could enable expedited widespread use of pre-commercial and commercial battery electric and hybrid-electric vehicles in the Basin include the following:

- demonstration of battery electric and fuel cell electric technologies for cargo handling and container transport operations, e.g., heavy-duty battery electric or plug-in electric drayage trucks with all electric range;
- demonstration of medium-duty battery electric and fuel cell electric vehicles in package delivery operations, e.g., battery electric walk-in vans with fuel cell or CNG range extender;
- development and demonstration of battery and fuel cell electric off-road equipment; e.g. battery electric off-road construction equipment or yard tractors;
- development and demonstration of CNG hybrid vehicle technology;
- development and demonstration of diesel hybrid vehicle technology;
- development of hybrid vehicles and technologies for off-road equipment;
- demonstration of niche application battery and fuel cell electric medium- and heavy-duty vehicles, including school and transit buses and refuse trucks with short-distance fixed service routes;

- demonstration of integrated programs that make best use of electric drive vehicles through interconnectivity between fleets of shared electric vehicles and mass transit, and rideshare services that cater to multiple users and residents in disadvantaged communities;
- development of eco-friendly intelligent transportation system (ITS), geofencing, and Eco-Drive strategies to maximize emission reductions and energy consumption by operating in zero emission mode when driving in disadvantaged communities, demonstrations that encourage electric drive vehicle deployment in autonomous applications, optimized load-balancing strategies and improved characterization of in-duty drayage cycles and modeling/simulations for cargo freight and market analysis for zero emission heavy-duty trucks;
- demonstration and installation of infrastructure to support battery electric and fuel cell electric vehicle light-, medium- and heavy-duty fleets, and ways to reduce cost and incentivize incremental costs over conventionally fueled vehicles, meet fleet operational needs, improve reliability, and integrate with battery energy storage, renewable energy and energy management strategies (e.g., vehicle-to-grid or vehicle-to-building functionality, demand response, load management);
- development of higher density battery technologies for use in heavy-duty vehicles;
- repurpose EV batteries for other or second life energy storage uses, as well as reusing battery packs and approaches to recycle lithium, cobalt and other metals;
- development of a methodology to increase capability to accept fast-charging and resultant life cycle and demonstration of effects of fast-charging on battery life and vehicle performance; and
- deployment of infrastructure corresponding to codes and standards specific to light-, medium- and heavy-duty vehicles, including standardized connectors, fuel quality, communication protocols, and open standards and demand response protocols for EV chargers to communicate across charging networks.

Fueling Infrastructure and Deployment (Natural Gas/Renewable Fuels)

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 Basin and beyond. There is also growing interest for partial or complete transition to renewable natural gas delivered through existing natural gas pipelines. 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 established a target to double the energy efficiency in electricity and natural gas end uses by 2030.

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 reductions 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.

Stationary Clean Fuel Technologies

Although stationary source NOx emissions are small compared to mobile sources in the Basin, there are applications where cleaner fuel technologies or processes can be applied to reduce NOx, VOC and PM emissions. For example, a recent demonstration project funded in part by the South Coast AQMD 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 not only improve air quality but enhance power quality and reduce electricity distribution congestion.

SCR has been used as aftertreatment for combustion equipment for NOx reduction. SCR requires the injection of ammonia or urea that is reacted over a catalyst bed to reduce the NOx formed during the combustion process. Challenges arise if ammonia distribution within the flue gas or operating temperature is not optimal resulting in ammonia emissions leaving the SCR in a process referred to as "ammonia slip". The ammonia slip may also lead to the formation of particulate matter in the form of ammonium sulfates. An ongoing demonstration project funded in part by the South Coast AQMD consists of retrofitting a Low NOx ceramic burner on an oil heater without the use of reagents such as ammonia nor urea which is anticipated to achieve SCR NOx emissions or lower. Based on the successful deployment of this project, further emission reductions may be achieved by other combustion sources such as boilers by the continued development of specialized low NOx burners without the use of reagents.

Additionally, alternative energy storage could be achieved through vehicle-to-grid or vehicle-to-building technologies, as well as power-to-gas that could allow potentially stranded renewable electricity stored as hydrogen fuel. UCR's Sustainable Integrated Grid Initiative and UCI's Advanced Energy and Power Program, funded in part by the South Coast AQMD, 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., new innovative low NOx burners and fuel cells);
- exploration of renewables, waste gas and produced gas sources for cleaner stationary technologies;
- evaluation, development and demonstration of advanced control technologies for stationary sources;
- vehicle-to-grid, vehicle-to-building, or other stationary energy demonstration projects to develop sustainable, low emission energy storage alternatives; and
- development and demonstration of microgrids with photovoltaic/fuel cell/battery storage/EV chargers and energy management.

The development, demonstration, deployment and commercialization of advanced stationary clean fuel technologies will support control measures in the 2016 AQMP in that they reduce emissions of NOx and VOCs from traditional combustion sources by replacement or retrofits with zero and near-zero emission technologies.

Health Impacts, Fuel and Emissions Studies

The monitoring of pollutants in the Basin is extremely important, especially when linked to (1) a particular sector of the emissions inventory (to identify the responsible source or technology) and/or (2) exposure to pollution (to assess potential health risks). In fact, studies indicate that ultrafine particulate matter (PM) can produce irreversible damage to children's lungs. This information highlights the need for further emission and health studies to identify emissions from high polluting sectors as well as the health effects resulting from these technologies.

Over the past few years, the South Coast AQMD has funded emission studies to evaluate the impact of tailpipe emissions of biodiesel and ethanol fueled vehicles mainly focusing on criteria pollutants and GHG emissions. These studies showed that biofuels, especially biodiesel in some applications and duty cycles, can contribute to higher NOx emissions while reducing other criteria pollutant emissions. In 2020, South Coast approved comprehensive ethanol fuel study along with CARB and others to assess the emissions and secondary organic aerosol impacts on model year 2002 and up light duty vehicles. 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. In 2015, South Coast AQMD funded studies to further investigate the toxicological potential of emissions, such as ultrafine particles and vapor phase substances, and to determine whether substances such as volatile or semi-volatile organic compounds are being emitted in lower mass emissions that could pose harmful health effects. In addition, as the market share for gasoline direct injection (GDI) vehicles has rapidly increased from 4 percent of all vehicle sales in the U.S. to an estimated 60 percent between 2009 and 2016, it is important to understand the air quality impacts from these vehicles. South Coast AQMD has funded studies to investigate both physical and chemical composition of tailpipe emissions, focusing on PM from GDI vehicles as well as secondary organic aerosol formation formed by the reaction of gaseous and particulate emissions from natural gas and diesel heavy-duty vehicles. In 2017, South Coast AQMD initiated a basin wide in-use real-world emissions study, including fuel usage profile characterization and an assessment of the impacts of current technology and alternative fuels. Preliminary results suggest real-world emissions vary greatly between applications and fuel types. In 2020, CARB adopted Omnibus regulation to the next lower level NOx standard, particularly highlighting the need to address the gap between certification values and in-use emissions. The new regulation included a new low-load cycle, new in-use emissions testing metric based on 3-Bin Moving Average Windows (3B-MAW), and new concept to assess NOx across the entire vehicle population via onboard emission sensors. The new lower level emissions trigger the need to perform a new in-use study focus on assessing the variability in-use, multiple proposals from CARB, EPA and other are under discussion to fulfill that need. The current and future real-world emissions study could help stakeholders better understand the impacts of emissions in real time to a specific geographic area.

One a large scale, Senate Bill 210 was signed in the law in 2019 which directs CARB to development and implement a new comprehensive heavy-duty inspection and maintenance (HD I/M) program to support higher emitter and issues with mal-maintenance to ensure trucks maintain their emissions for their intended useful life. The HD I/M program includes a measurement emission from large population of trucks which is critical for success of this program. Remote sensing technology, which can be setup near road side and over passes has gain the spot light for enabling a new suite of technology for assess emissions in-use. South Coast AQMD staff is closing monitoring the CARB progress and see how it can help us better understand emissions inventory.

Previous studies of ambient levels of toxic air contaminants, such as the MATES studies, have found that diesel exhaust is the major contributor to health risk from air toxics. MATES V was launched in 2017 to update the emissions inventory of toxic air contaminants and modeling to characterize risks, including measurements and analysis of ultrafine particle concentrations typically emitted or converted from vehicle exhaust. In addition, staff are also performing additional advanced monitoring activities as an extension of the MATES V study.

In recent years, there has also been an increased interest at the state and federal level on the use of alternative fuels 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. More recently, the power-to-gas concept has renewed interest in hydrogen-fossil fuel blends where the emissions impact on latest ICE technologies needs to be reassessed. In 2019, South Coast AQMD, along with SoCalGas, UCR/CE-CERT launched a study to assess emissions of hydrogen-natural gas blends on near-zero emission natural gas engines. Moreover, based on higher average summer temperatures noted over the past few years, there is interest on how the higher temperatures impact ozone formation. In line with this, a project launched in 2019 to evaluate meteorological factors and trends contributing to recent poor air quality in the Basin. These types of studies may be beneficial to support the CERPs developed under AB 617, as well as other programs targeting benefits to residents in disadvantaged communities.

Some areas of focus include:

- demonstration of remote sensing technologies to target different high emission applications and sources;
- studies to identify health risks associated with ultrafine and ambient particulate matter to characterize toxicity and determine specific combustion sources;
- in-use emission studies using biofuels, including renewable diesel, to evaluate in-use emission composition;
- in-use emission studies to determine impact of new technologies, in particular EVs on local air quality as well as benefit of telematics on emission reduction strategies;
- lifecycle energy and emissions analyses to evaluate conventional and alternative fuels;
- analysis of fleet composition and its associated impacts on criteria pollutants;
- evaluation of emissions impact of hydrogen-fossil fuel blends on latest technology engines; and
- evaluation of impact of higher ambient temperatures on emissions of primary and secondary air pollutants.

Emissions Control Technologies

Although engine technology and engine systems research are required to reduce the emissions at the combustion source, dual fuel technologies and post-combustion cleanup methods are also needed to address currently installed 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 PM traps and advanced SCR and DPF catalysts coupled with electrically heated diesel exhaust fluid (DEF) dosers and electrical heaters that increase the aftertreatment temperature utilizing the 48V battery system from diesel-hybrid powertrain, 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.

Recently, onboard emissions sensors have been identified by CARB and other agencies as a new method for assessing in-use emissions compliance. At the same time, researchers have proposed to use sensors, coupled with GPS, cellular connection, weather, traffic, and other online air quality models, to enable advanced concepts like Geofencing, Eco-routing, and more. 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 renewable-diesel engines and advanced aftertreatment technologies for mobile applications (including heated dosing technologies, close coupled catalysts, electronically heated catalysts and other advanced selective catalytic reduction systems) as well as non-thermal regen technology;
- development and demonstration of low-VOC and PM lubricants for diesel and natural gas engines;
- develop, evaluate, and demonstrate onboard sensor-based emissions monitoring methodology; and
- develop, evaluate, and demonstrate cloud-based emissions and energy management system

Technology Assessment and Transfer/Outreach

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 to expedite the implementation of low emission and clean fuel technologies, coordinating activities with other organizations and educating the end users of these technologies. Technology transfer efforts include supporting various incentive programs that encourage the purchase of cleaner technologies, cosponsoring technology-related conferences, workshops and other events, and disseminating information on advanced technologies to various audiences (i.e., residents in disadvantaged communities, local governments, funding agencies, technical audiences). As part of Assembly Bill (AB) 617[15], which requires reduced exposure to communities most impacted by air pollution, TAO conducted additional outreach to AB 617 communities regarding available zero and near-zero emission technologies and incentives to accelerate the adoption of cleaner technologies. Cleaner technologies such as zero emission heavy-duty trucks are now included in the Community Emission Reduction Plans (CERPs) for these AB 617 communities.

Target Allocations to Core Technology Areas

The figure below presents the potential allocation of available funding, based on South Coast AQMD projected program costs of $17.9 million for all potential projects. The actual project expenditures for 2021 will be less than the total South Coast AQMD projected program costs since not all projects will materialize. 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 South Coast AQMD funding. Specific contract awards throughout 2021 will be based on this proposed allocation, quality of proposals received and evaluation of projects against standardized criteria and ultimately South Coast AQMD Board approval.

[15] https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/about

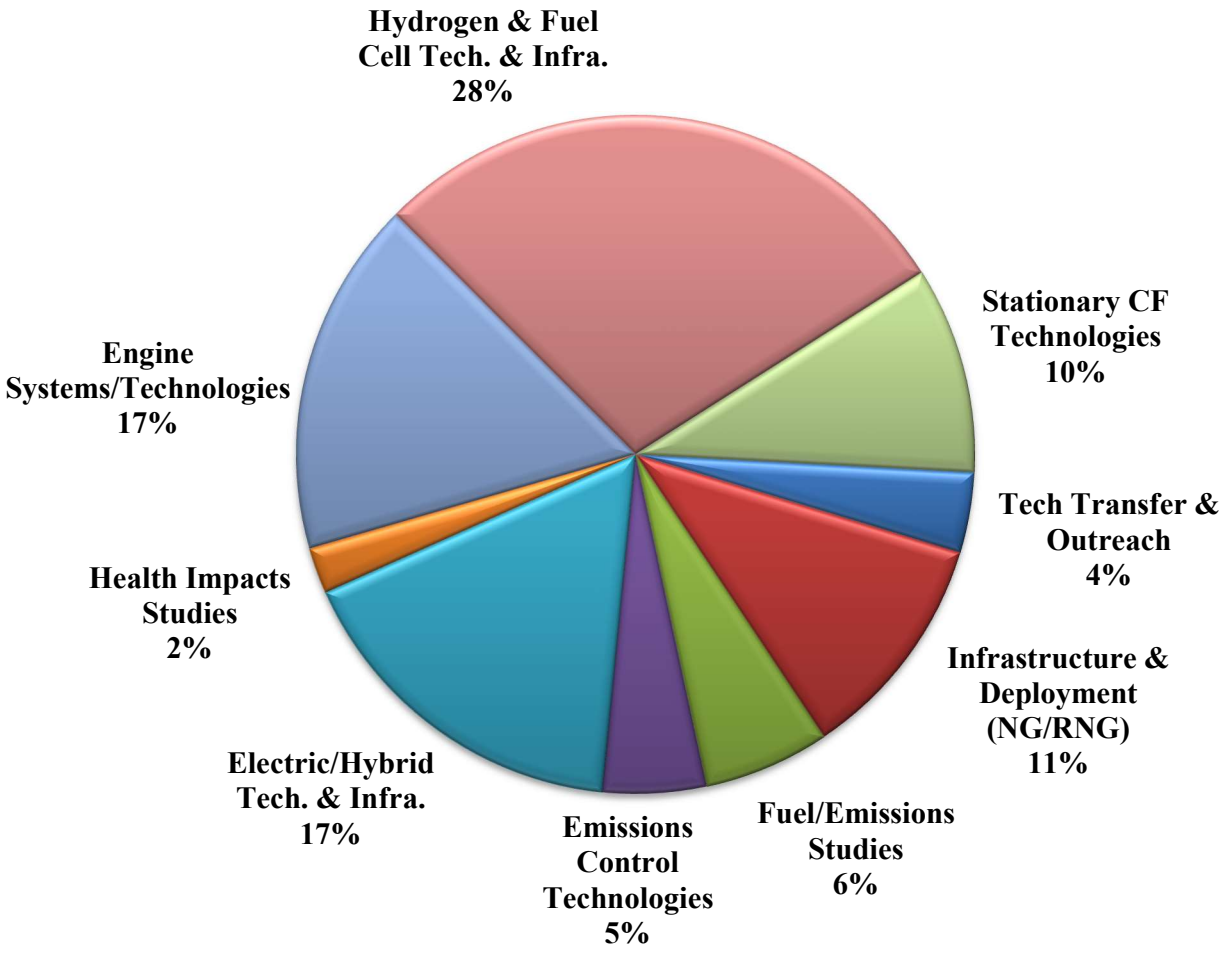


Figure 22: Projected Cost Distribution for Potential South Coast AQMD Projects in 2021 ($17.9M)

CLEAN FUELS PROGRAM
Program Plan Update for 2021

This section presents the Clean Fuels Program Plan Update for 2021. The proposed projects are organized by program areas and described in further detail, consistent with the South Coast AQMD budget, priorities and the best available information on the state-of-the-technology. Although not required, this Plan also includes proposed projects that may also be funded by revenue sources other than the Clean Fuels Program, through state and federal grants for clean fuel technologies, incentive programs such as AB 617 Community Air Protection (CAP) funding, Volkswagen Mitigation and Carl Moyer, and VOC and NOx mitigation.

Table 6 summarizes potential projects for 2021 as well as the distribution of South Coast AQMD costs in some areas as compared to 2020. The funding allocation continues the focus on development and demonstration of zero and near-zero emission technologies including infrastructure to support these vehicles and off-road equipment. For the 2021 Draft Plan, the same four funding categories remain at the top but with reduced funding for electric/hybrid technologies in light of large electric/hybrid projects recently funded and with additional funding to Stationary Clean Fuel Technologies and Emissions Control Technologies for planned projects in 2021, including:

- Heavy-duty zero emission battery electric and fuel cell trucks and infrastructure;
- Onboard sensor development for emissions monitoring and improved efficiency;
- Microgrid demonstrations to support zero emission infrastructure;
- Battery and fuel cell electric transit and school buses and fleet charging/fueling infrastructure;
- Heavy-duty diesel truck replacements with near-zero emissions natural gas trucks; and
- Fuel and emissions studies, such as conducting airborne measurements and analysis of NOx emissions and assessing emissions impacts of hydrogen-natural gas fuel blends on near-zero emissions heavy-duty natural gas engines.

As in prior years, the funding allocations again align well with the South Coast AQMD's FY 2020-21 Goals and Priority Objectives, which includes supporting development of cleaner advanced technologies. Overall, the Clean Fuels Program is designed to ensure a broad portfolio of technologies, complement 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 South Coast AQMD Governing Board for approval prior to contract initiation. This Plan Update reflects the maturity of the proposed technology and identifies contractors to implement the projects, participating host sites and fleets, and securing sufficient cost-sharing to complete the project, and other necessary factors. Recommendations to the South Coast AQMD Governing Board will include descriptions of the technologies to be demonstrated or deployed, their applications, proposed scope of work, and capabilities of the selected contractor(s) and project team, in addition to the expected costs and 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 6.

Proposed Project: A descriptive title and a designation for future reference.

Expected South Coast AQMD Cost: The estimated proposed South Coast AQMD cost-share as required by H&SC 40448.5.1.(a)(1).

Expected Total Cost: The estimated total project cost including the South Coast AQMD 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 South Coast AQMD 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.

Table 6: Summary of Potential Projects for 2021

Proposed Project	Expected SCAQMD Cost $	Expected Total Cost $
Hydrogen/Mobile Fuel Cell Technologies and Infrastructure		
Develop and Demonstrate Hydrogen Research to Support Innovative Technology Solutions for Fueling Fuel Cell Vehicles	90,000	1,800,000
Develop and Demonstrate Hydrogen Production and Fueling Stations	2,000,000	6,500,000
Develop and Demonstrate Medium- and Heavy-Duty Fuel Cell Vehicles	2,644,500	12,000,000
Demonstrate Light-Duty Fuel Cell Vehicles	75,000	75,000
Subtotal	$4,809,500	$20,375,000
Engine Systems/Technologies		
Develop and Demonstrate Advanced Gaseous- and Liquid-Fueled Medium- and Heavy-Duty Engines & Vehicle Technologies to Achieve Ultra-Low Emissions	2,750,000	10,000,000
Develop and Demonstrate Alternative Fuel and Clean Conventional Fueled Light-Duty Vehicles	176,300	1,000,000
Develop and Demonstrate Low Load and Cold-Start Technologies	176,300	1,000,000
Develop and Demonstrate Low Emissions Locomotive Technologies	176,300	1,000,000
Subtotal	$3,278,900	$13,000,000
Electric/Hybrid Technologies and Infrastructure		
Develop and Demonstrate Medium- and Heavy-Duty On-Road and Off-Road Battery Electric and Hybrid Vehicles and Equipment	2,400,000	22,800,000
Develop and Demonstrate Electric Charging Infrastructure	600,000	30,790,000
Demonstrate Alternative Energy Storage	300,000	2,000,000
Demonstrate Light-Duty Battery Electric Vehicles	200,000	200,000
Subtotal	$3,500,000	$55,790,000
Fueling Infrastructure and Deployment (Natural Gas/Renewable Fuels)		
Demonstrate Near-Zero Emission Natural Gas Vehicles in Various Applications	500,000	2,100,000
Develop, Maintain and Expand Natural Gas Infrastructure	500,000	2,100,000
Demonstrate Renewable Transportation Fuel Manufacturing and Distribution Technologies	$1,000,000	$10,000,000
Subtotal	$2,000,000	$14,200,000
Stationary Clean Fuel Technologies		
Develop and Demonstrate Microgrids with Photovoltaic/Fuel Cell/Battery Storage/EV Chargers and Energy Management	1,000,000	4,500,000
Develop and Demonstrate Zero or Near-Zero Emission Energy Generation Alternatives	264,450	1,000,000
Subtotal	$1,264,450	$5,500,000

Table 6: Summary of Potential Projects for 2021 (cont'd)

Proposed Project	Expected SCAQMD Cost $	Expected Total Cost $
Fuel/Emissions Studies		
Conduct In-Use Emissions Studies for Advanced Technology Vehicle Demonstrations	500,000	2,000,000
Conduct Emissions Studies on Biofuels, Alternative Fuels and Other Related Environmental Impacts	400,000	1,500,000
Identify and Demonstrate In-Use Fleet Emissions Reduction Technologies and Opportunities	200,000	1,000,000
Subtotal	$1,100,000	$4,500,000
Emissions Control Technologies		
Develop and Demonstrate Advanced Aftertreatment Technologies	250,000	1,000,000
Develop and Demonstrate Advanced Aftertreatment Catalyst Heating Technologies	250,000	1,000,000
Develop Methodology and Evaluate and Demonstrate Onboard Sensors for On-Road Heavy-Duty Vehicles	250,000	1,000,000
Demonstrate On-Road Technologies in Off-Road and Retrofit Applications	176,300	800,000
Subtotal	$926,300	$3,800,000
Health Impacts Studies		
Evaluate Ultrafine Particle Health Effects	88,150	1,000,000
Conduct Monitoring to Assess Environmental Impacts	132,225	500,000
Assess Sources and Health Impacts of Particulate Matter	132,225	300,000
Subtotal	$352,600	$1,800,000
Technology Assessment/Transfer and Outreach		
Assess and Support Advanced Technologies and Disseminate Information	350,000	800,000
Support Implementation of Various Clean Fuels Vehicle Incentive Programs	350,000	400,000
Subtotal	$700,000	$1,200,000
TOTALS FOR POTENTIAL PROJECTS	**$17,931,750**	**$120,165,000**

Technical Summaries of Potential Projects

Hydrogen/Mobile Fuel Cell Technologies and Infrastructure

Proposed Project: Develop and Demonstrate Hydrogen Research to Support Innovative Technology Solutions for Fueling Fuel Cell Vehicles

Expected South Coast AQMD Cost: $90,000

Expected Total Cost: $1,800,000

Description of Technology and Application:

California regulations require automakers to place increasing numbers of ZEVs into service every year. By 2050, CARB projects that 87% of light-duty vehicles on the road will be zero emission battery and FCVs.

Many stakeholders are working on hydrogen and fuel cell products, markets, requirements, mandates and policies. California has been leading the way for hydrogen infrastructure and FCV deployment. This leadership has advanced a hydrogen network that is not duplicated anywhere in the U.S. and is unique in the world for its focus on providing a retail fueling experience. In addition, the advancements have identified many lessons learned for hydrogen infrastructure development, deployment and operation. Other interested states and countries are using California's experience as a model case, making success in California paramount to enabling market acceleration and uptake in the U.S. U.S. leadership for hydrogen technologies is rooted in California, a location for implementing many DOE H2@Scale pathways, such as reducing curtailment and stranded resources, reducing petroleum use and emissions, and developing and creating jobs. The technical research capability of the national laboratories can be used to assist California in decisions and evaluations, as well as to verify solutions to problems impacting the industry. Because these challenges cannot be addressed by one agency or one laboratory, in 2018, a hydrogen research consortium was organized to combine and collaborate.

The California Hydrogen Infrastructure Research Consortium focuses on top research needs and priorities to address near-term problems in order to support California's continued leadership in innovative hydrogen technology solutions needed for fueling FCVs. These tasks also provide significant contributions to the DOE H2@Scale Initiative. For instance, advances in fueling methods and components can support the development of supply chains and deployments. Currently, funded tasks include data collection from operational stations, component failure fix verification (i.e., nozzle freeze lock), reporting about new fueling methods for medium- and heavy-duty applications and ensuring hydrogen quality is maintained. The tasks are supported by leading researchers at NREL and coordinating national labs and managed in detail (e.g., schedule, budget, roles, milestones, tasks, reporting requirements) in a hydrogen research consortium project management plan.

These efforts are complemented by projects undertaken and supported by the CaFCP and its members over the last few years such as the Vision 2030 document released in July 2018 establishing a roadmap for future FCV and hydrogen refueling stations, including barriers that need to be overcome and CARB's Advanced Clean Truck Regulation adopted in June 2020.

This project area would enable cofunding support for additional or follow on mutually agreed technical tasks with the California Hydrogen Infrastructure Research Consortium members, the CaFCP as well as other collaborative efforts that may be undertaken to advance hydrogen infrastructure technologies.

Potential Air Quality Benefits:

The 2016 AQMP identifies the use of alternative fuels and zero emission transportation technologies as necessary to lower NOx and VOC emissions, in an effort to meet federal air quality standards. One of the major advantages of FCVs is the fact that they use hydrogen, a fuel that can be domestically produced

from a variety of resources such as natural gas (including biogas), electricity (stationary turbine technology, solar or wind) and biomass. The technology and means to produce hydrogen fuel to support FCVs are available but require optimization to achieve broad market scale. The deployment of large numbers of FCVs, which is one strategy to attain air quality goals, requires a well-planned and robust hydrogen fueling infrastructure network. This South Coast AQMD project, with significant additional funding from other governmental and private entities, will work towards providing the necessary hydrogen fueling infrastructure network.

Proposed Project: Develop and Demonstrate Hydrogen Production and Fueling Stations

Expected South Coast AQMD Cost: $2,000,000

Expected Total Cost: $6,500,000

Description of Technology and Application:

Alternative fuels, such as hydrogen and the use of advanced technologies, such as FCVs, 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 challenge to the entry and acceptance of direct-hydrogen FCVs is the limited number and scale of hydrogen refueling and production 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, dispensing pressures that support zero emission vehicle deployment and compatibility with existing CNG stations may be considered.

Energy Stations: Multiple-use energy stations that can produce hydrogen for FCVs 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 optimize strategies for hydrogen fueling infrastructure deployment and as a means to produce power and hydrogen from renewable feedstocks (e.g., biomass, digester gas) and store hydrogen in larger scales to support electric systems.

Innovative Refueling Appliances: Home or small scale refueling/recharging is an attractive advancement for alternative clean fuels for some potential applications. This project would evaluate a hydrogen innovative refueler for cost, compactness, performance, durability, emission characteristics, ease of assembly and disassembly, maintenance and operations. Other issues such as setbacks, building permits, building code compliance and UL ratings for safety would also be evaluated.

Projections for on-the-road FCVs counts are now 27,000 in 2023 and 48,900 in 2026 in California and the majority of these do not include medium- and heavy-duty vehicles that may be deployed in the Basin. To provide fuel for these vehicles, the hydrogen fueling infrastructure needs to be significantly increased and become more reliable in terms of availability. South Coast AQMD will seek additional funding from CEC and CARB to construct and operate hydrogen fueling stations and take advantage of funding opportunities that may be realized by any momentum created by the Governor's 2018 Executive Order to establish 200 stations by 2025 and adoption of CARB's Advanced Clean Truck Regulation.

Potential Air Quality Benefits:

The 2016 AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy. Pursuant to AQMP goals, the South Coast AQMD 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. FCVs constitute some of the cleanest alternative-fuel vehicles today. Since hydrogen is a key fuel for FCVs, 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 South Coast AQMD Cost: $2,644,500

Expected Total Cost: $12,000,000

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 as a way of reducing costs and potentially enhancing performance of FCVs.

The California ZEV Action Plan specifies actions to help deploy an increasing number of ZEVs, including medium- and heavy-duty ZEVs. CARB recently adopted Advanced Clean Truck and Fleet Regulations in addition to Innovative Clean Transit Bus Regulation as other drivers. 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 FCVs 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, the DOE awarded South Coast AQMD funds to demonstrate Zero Emission Container Transport (ZECT) technologies. In 2015, the DOE awarded South Coast AQMD additional funds to develop and demonstrate additional fuel cell truck platforms and vehicles under ZECT II. More recently, the Clean Fuels Program cost-shared the development of transit buses at OCTA and will cost-share the demonstration of trucks and hydrogen stations to support the Port of Los Angeles project. More projects like these are anticipated as the OEMs come on board.

This category may include projects in the following applications:

On-Road:	**Off-Road:**
• Transit Buses • Shuttle Buses • Medium- & Heavy-Duty Trucks	• Vehicle Auxiliary Power Units • Construction Equipment • Lawn and Garden Equipment • Cargo Handling Equipment

Potential Air Quality Benefits:

The 2016 AQMP identifies the need to implement ZEVs. South Coast AQMD 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 FCVs. 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 FCVs 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 as well as GHG emission reductions. Currently, the range of the trucks in the ZECT II project have a targeted range of 150 miles. Future projects would include extending the range of the FCVs up to 400 miles and to demonstrate improvements to the reliability and durability of the powertrain systems and hydrogen storage system. For fuel cell transit buses, projects are being proposed that reduce the cost of the fuel cell bus to less than $1 million through advanced technologies for the fuel cell stack and higher density and lower cost batteries.

Proposed Project: Demonstrate Light-Duty Fuel Cell Vehicles

Expected South Coast AQMD Cost: $75,000

Expected Total Cost: $75,000

Description of Technology and Application:

This proposed project would support the demonstration of limited production and early commercial light-duty FCVs using gaseous hydrogen with proton exchange membrane (PEM) fuel cell technology, mainly through showcasing this technology. Recent designs of light-duty FCVs 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 limited-production FCVs are planned for retail deployment in early commercial markets near hydrogen stations by several OEMs. 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 OEM technical and customer support. South Coast AQMD has included FCVs as part of its demonstration fleet since it started the Five Cities Program in 2005 with the Cities of Burbank, Ontario, Riverside, Santa Ana, and Santa Monica to deploy 30 hydrogen ICE vehicles and five hydrogen stations. As part of this effort, South Coast AQMD has provided support, education, and outreach regarding FCV technology on an ongoing 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.

Hyundai, Toyota and Honda have commercialized FCVs in California, and Toyota is redesigning the 2020 Mirai as a five-passenger sedan. The first commercial FCV leases are ending, and solo carpool lane access extends only for MY 2017 and later, encouraging new replacements. Innovative strategies and demonstration of dual fuel, ZEVs could expand the acceptance of BEVs and accelerate the introduction of fuel cells in vehicle propulsion. As hydrogen production dedicated to transportation increases from multiple providers in the next few years, and station throughput increases, dispensed hydrogen cost should start to decrease, which would encourage more model development and enable more demonstration and deployment.

Potential Air Quality Benefits:

The 2016 AQMP identifies the need to implement ZEVs. South Coast AQMD 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 FCVs. Expected immediate benefits include the deployment of zero emission vehicles in South Coast AQMD's demonstration fleet. Over the longer term, the proposed projects could help foster wide-scale implementation of ZEVs 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/Technologies

Proposed Project: Develop and Demonstrate Advanced Gaseous- and Liquid-Fueled Medium- and Heavy-Duty Engines and Vehicles Technologies to Achieve Ultra-Low Emissions

Expected South Coast AQMD Cost: $2,750,000

Expected Total Cost: $12,500,000

Description of Technology and Application:

The objective of this proposed project would be to support development and certification of near-commercial prototype low emission medium- and heavy-duty gaseous- and liquid-fueled engine technologies, as well as integration and demonstration of these technologies in on-road vehicles. The NOx emissions target for this project area is 0.02 g/bhp-hr or lower and the PM emissions target is below 0.01 g/bhp-hr. Recent development of low-NOx hybrid powertrain also shown potential for achieving lower NOx as a combined system. To achieve these targets, an effective emissions control strategy must employ advanced fuel system and engine design features such as cylinder deactivation (CDA), aggressive engine calibration and improved thermal management, improved exhaust gas recirculation (EGR) systems, and aftertreatment devices that are optimized using a system approach. This effort is expected to result in several projects, including:

- development and demonstration of advanced engines in medium- and heavy-duty vehicles and high horsepower (HP) applications;
- development of durable and reliable retrofit technologies to partially or fully convert engines and vehicles from petroleum fuels to alternative fuels; and
- field demonstrations of advanced technologies in various fleets operating with different classes of vehicles.
- development and demonstration of CNG, propane and diesel hybrid powertrain technology

Anticipated fuels for these projects include but are not limited to alternative fuels (fossil fuel-based and renewable natural gas, propane, hydrogen blends, electric and hybrid), conventional and alternative diesel fuels, ultra-low sulfur diesel, renewable diesel, dimethyl ether and gas-to-liquid fuels. There has been significantly more interest as well as a mandate requiring the use of renewable fuels across all sectors due to CARB's Low Carbon Fuel Standard (LCFS). Projects listed under Fuel/Emissions Studies will assess the emissions impact of renewable fuels on past and future combustion technologies. Serval key diesel engine development projects that have demonstrated the ability to achieve 0.02 g/bhp-hr NOx under laboratory conditions has reach on-road truck demonstrate stage. The truck integration and packaging is another critical step towards commercialization. The prototype trucks are typically placed in revenue service to collect real-world performance data and well as end user feedback for production engines.

The use of alternative fuel in heavy-duty trucking applications has been demonstrated in certain local fleets within the Basin. These vehicles typically require 200-400 HP engines. Higher HP alternative fuel engines are beginning to be introduced. However, vehicle range, lack or limited accessible public infrastructure, lack of experience with alternative fuel engine technologies and limited selection of appropriate alternative fuel engine products as well as high initial cost 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 400 HP or more is limited. Continued development of cleaner dedicated alternative gaseous- or diesel-fueled engines over 400 HP with lower NOx emissions, would increase availability to end-users and provide additional emission reductions. Moreover, a developing trend of less incentive funding is occurring as certain alternative fuel engine technologies continue to reach full commercial readiness. Thus, continued development of cost-effective technologies that do not rely on incentives are key to drive additional market penetration and emissions reduction.

The South Coast AQMD has investigated the emergence of cost-effective mild hybrid powertrain technologies to achieve targeted lower-NOx emission standard and improved fuel economy. In 2020, CARB and EPA introduced new hybrid powertrain certification test procedures aiming to help hybrid powertrain certify to engine-based emission standards. The new test procedures utilize the equivalent vehicle based test cycles and real-time vehicle simulation to account for the fuel and emission benefits of hybrid vehicles under the traditional engine based test cycles. Cost effective hybrid technologies that offers reasonable payback period could potentially offer a faster commercialization pathway for reducing both NOx and GHG in the near term by strategically utilizing the existing internal combustion engines and electric components that assists engine operation and maintain aftertreatment temperature and efficiency. Simulation results shown that these newly integrated hybrid powertrains could be achieve the CARB 2024-2026 NOx standard of 0.05 g/bhp-hr while maintain reasonable cost and feasible pathway to 0.02 g/bhp-hr. These low-NOx hybrid powertrains could be another pathway for near term emissions reduction strategy until the full commercialization of zero emission technologies. Furthermore, low-cost mild hybrid system that do not rely on incentive could drive up sales outside of California and gain additional emissions reduction from interstate commerce trucks. Due to limited time to attainment and the fast approach to the CARB 2024 NOx limit, continued development and demonstration efforts are needed in the medium- and heavy-duty sector in order to accelerate the commercialization of next generation hybrid technologies to market.

Potential Air Quality Benefits:

This project is intended to expedite the commercialization of near-zero emission gaseous- and liquid-fueled medium- and heavy-duty engine technology both in the Basin and in intrastate operation. The emissions reduction benefits 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. A heavy-duty 8.9L and 11.9L engines using natural gas achieving NOx emissions of 0.02 g/bhp-hr have been certified and commercialized, with larger displacement and advanced technology (e.g., opposed piston) engines undergoing development. Further, neat or blended alternative fuels can also reduce heavy-duty engine particulate emissions by over 90 percent compared to current diesel technology. The key to future engine system project success is cost-effectiveness and availability of future incentives. 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 South Coast AQMD fleet regulations and towards compliance of the 2016 AQMP control measures as well as future CARB and EPA low NOx regulations.

Proposed Project: Develop and Demonstrate Alternative Fuel and Clean Conventional Fueled Light-Duty Vehicles

Expected South Coast AQMD Cost: $176,300

Expected Total Cost: $1,000,000

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, modified biodiesel and ultra-low sulfur diesel, and other novel technologies. The potential vehicle projects may include:

- certification of CNG light-duty sedans and pickup trucks used in fleet services;
- assessment of "clean diesel" vehicles, including hybrids and their ability to attain SULEV standards; and
- assessment of other clean technologies.

Other fuel and technology combinations may also be considered under this category.

Potential Air Quality Benefits:

The 2016 AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy. Pursuant to AQMP goals, the South Coast AQMD 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.

Proposed Project: Develop and Demonstrate Low Load and Cold-Start Technologies

Expected South Coast AQMD Cost: $176,300

Expected Total Cost: $1,000,000

Description of Technology and Application:

Cold starts and low loads of internal combustion engines have a negative impact on the environment especially in urban areas like much of the Basin. The thermal efficiency of the internal combustion engine is significantly lower at cold-starts and lower loads. Diesel exhaust aftertreatment systems require a temperature of 250 degrees Celsius or higher to operate at the highest level of emissions reduction efficiency, furthermore diesel engines at cold start increase emissions as much as 10% compared to spark-ignited CNG engines. At low loads, an aftertreatment system often may operate at 150 degrees Celsius. It is also now known that the smaller and poorly integrated hybrid powertrain engines are experiencing similar warm-up issues due to the on-off drive cycles. In fact, the CARB and EPA low-NOx regulation all included a new low-load cycle as well as new in-use low-load operation "bins" that sets emissions limits (different than traditional limits) on low-load operations. The need for thermal efficiency at start- up has led to a variety of suggestions and trials. The primary goal is to reduce energy losses so that systems and components such as the catalytic converter system reach and maintain their intended operating temperature range as soon as possible after engine start. In most cases, adaptation of algorithms associated with fuel injection timing, cylinder deactivation, EGR fraction, turbo control, heated dosing, SCR pre-heaters and close coupled catalysts can be used to keep the catalyst at the correct operating temperature. This project is to investigate technology to improve catalyst temperature at start-up and low loads with minimal economic impact and time. This technology could be applied to a range of vehicles from hybrid-electric light-duty vehicles to heavy-duty trucks. Emphasis should be on steady temperature control at optimal degrees already proven and established through significant research. The following items are the most recently developed best practices with respect to cost and functionality. These engine-based technologies should be integrated closely with aftertreatment technologies to maximize the intended emissions benefit.

- Develop and demonstrate engine-based low-load and cold start technologies such as cylinder activation technology on heavy-duty applications; and
- develop control algorithms to ensure the engine exhaust maintains catalyst temperature throughout the duty cycle.

The project would be implemented, and fleet tested, and recorded over a minimum 12-month period. Further projects can develop from this technology and should be tested in regard to other liquid fuel burning engines.

Potential Air Quality Benefits:

The technology to reduce emissions at cold starts and low loads is beneficial to a broad spectrum of vehicles from hybrid electric, light-duty and heavy-duty engines in drayage long haul trucks. The advancement in this technology will directly contribute toward low NOx required as a result of U.S. EPA and CARB's heavy-duty engine standard and the current attainment policies in effect. Eliminating cold starting engine issues also directly creates a co- benefit of reducing fuel consumption.

Proposed Project: Develop and Demonstrate Low Emissions Locomotive Technologies

Expected South Coast AQMD Cost: $176,300

Expected Total Cost: $1,000,000

Description of Technology and Application:

The objective of this project is to support the development and demonstration of gaseous and liquid fueled locomotive engines. The requirements of locomotive engines as primary generators of electricity to power the locomotive poses serious challenges. Locomotives operate at a specific duty cycle different than conventional on-road engines. The engines often run at low speed and have extended periods of idle time. The durability requirements also surpass other forms of transportation.

Large displacement gaseous fueled engines do not currently exist to power locomotives. The early stages of development of engines and systems to fill this need is currently on-going. Engines are expected to be below the current 0.2g/bhp-hr low NOx standard. The adaptation of alternative fueled locomotives in coordination with required infrastructure improvement by leading manufacturers in the industry shows great potential for further research and cost savings with less maintenance costs and better reliability.

Potential Air Quality Benefits:

This project is expected to reduce emissions around 97 tons per year of NOx for each locomotive. The reduction of PM and CO2 also shows great potential mitigation in environmental justice communities.

Electric/Hybrid Technologies and Infrastructure

Proposed Project: Develop and Demonstrate Medium- and Heavy-Duty On-Road and Off-Road Electric and Hybrid Vehicles and Equipment

Expected South Coast AQMD Cost: $2,203,750

Expected Total Cost: $12,500,000

Description of Technology and Application:

The significance of transportation in overall carbon emissions is increasing as energy utilities move toward cleaner and more sustainable ways to generate electricity. In 2018, the U.S. EPA[16] estimated that transportation was responsible for about 28 percent of the nation's carbon emissions, while the electricity sector emissions accounted for 27 percent.

The South Coast AQMD has long been a leader in promoting early demonstrations of next generation light-duty vehicle propulsion technologies (and fuels). However, given the commercial availability of light-duty EVs, priorities have shifted. South Coast AQMD will continue to evaluate market offerings and proposed technologies in light-duty vehicles to determine if any future support is required.

Meanwhile, medium- and heavy-duty vehicles make up 4.8[17] percent of vehicles in the U.S. and drive 9.4[18] percent of all vehicle miles traveled each year yet are responsible for more than 38[19] percent of all the fuel burned annually. Moreover, the 2016 AQMP identified medium- and heavy-duty vehicles as the largest source of NOx emissions in the Basin. Electric and hybrid technologies have gained momentum in the light-duty sector with commercial offerings by most of the automobile manufacturers. Unfortunately, there are significant emission reductions needed for medium- and heavy-duty vehicles and off-road equipment, exacerbated by low turnover of these vehicles by fleets and high incremental costs for battery electric vehicles and equipment compared to conventional-fueled vehicles and equipment.

The South Coast AQMD has investigated the use of electric and hybrid technologies to achieve similar performance as conventional-fueled counterparts while achieving emission reductions and improved fuel economy. Multiple natural gas and diesel hybrid vehicles have been development and demonstrated under the DOE funded Zero Emissions Cargo Transport (ZECT), CARB Greenhouse Gas Reduction Fund (GGRF) and NREL's Natural Gas Vehicle Consortium. These hybrid trucks all share plug-in capability and capable of zero emission operation and some leveraging advance concepts such as Geofencing to maximize emissions reduction in certain areas. Vehicle based hybrid system continue to progress for additional emissions reduction and efficiency improvements. Engine powertrain based hybrid system began to emerge since the introduction of the optional hybrid powertrain test procedures, The hybrid powertrain based projects are further described under engine systems.

Vehicle categories to be considered for potential or future demonstration and deployment projects include drayage/freight/regional haul trucks, utility trucks, delivery vans, shuttle buses, transit buses, waste haulers, construction equipment, cranes and other off-road equipment such as yard tractors, forklifts, top handlers, and RTG cranes. Innovations that may be considered for demonstration and deployment include advancements in the auxiliary power unit, either ICE or other heat engine; and battery-dominant hybrid systems utilizing off-peak charging, with advanced battery technologies including alternative chemistries, design, and management systems. 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, renewable diesel, or even modified biodiesel may be considered if the

[16] https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions
[17] https://www.bts.gov/content/number-us-aircraft-vehicles-vessels-and-other-conveyances
[18] https://www.bts.gov/content/us-vehicle-miles
[19] https://www.bts.gov/content/fuel-consumption-mode-transportation-1

emission benefits can be demonstrated as equivalent or superior to alternative fuels. Both new designs and retrofit technologies and related charging infrastructure will be considered.

Both on-road vehicles and off-road equipment are transitioning increasingly towards zero emission technologies. Off-road equipment include cargo handling and construction equipment. Several manufacturers have released battery electric and hybrid equipment, and more are becoming commercially available. Since the applications are more diverse in this sector, continued development and incentives are needed to accelerate progress in this sector.

This project category will develop and demonstrate:

- various electric vehicles and equipment;
- anticipated costs for electric vehicles and equipment;
- customer interest and preferences for these alternatives;
- integration of technologies into prototype vehicles and fleets;
- battery electric and hybrid-electric medium- and heavy-duty vehicles (e.g., drayage/freight/regional haul trucks, utility trucks, delivery vans, shuttle buses, transit buses, waste haulers);
- development and demonstration of battery electric off-road equipment, (e.g., battery electric off-road cargo handling and construction equipment);
- development and demonstration of CNG hybrid vehicle technology; and
- development and demonstration of diesel hybrid vehicle technology.

Potential Air Quality Benefits:

The 2016 AQMP identifies zero or near-zero emission vehicles as a key attainment strategy. Plug-in hybrid electric technologies have the potential to achieve near-zero emission while retaining the range capabilities of conventional-fueled vehicles, a key factor expected to enhance broad consumer acceptance. Given the variety of EV systems under development, it is critical to determine actual emission reductions and performance metrics compared to conventional-fueled vehicles. Successful demonstration of optimized prototypes would promise to enhance the deployment of zero and near-zero emission technologies.

Expected benefits include the establishment of criteria for emission evaluations, performance requirements, and customer acceptability of the technology. This will help both regulatory agencies and OEMs to expedite introduction of zero and near-zero emission vehicles in the Basin, which is a high priority of the 2016 AQMP.

Proposed Project: Develop and Demonstrate Electric Charging Infrastructure

Expected South Coast AQMD Cost: $220,375

Expected Total Cost: $1,250,000

Description of Technology and Application:

There is a critical need to address gaps in EV charging infrastructure availability. Almost half (47 percent) of the 1,556,058[20] EVs sold in the U.S. since 2010 were in California, and of those sales in California, almost half (44[21] percent) of CVRP rebates issued as of February 2020 were for vehicles in the South Coast AQMD. In addition, the California ZEV Action Plan, which was updated in 2018, calls for 5 million ZEVs and supporting infrastructure by 2030.

There are separate challenges associated with infrastructure for light-duty EVs vs. medium- and heavy-duty EVs, which are on opposite ends of the commercialization spectrum. Light-duty EVs and charging infrastructure have long been commercially available with an agreed upon SAE J1772 connector standard for Level 1 and Level 2 charging. Availability of public fast charging and workplace charging continues to increase and is needed particularly for residents in multi-unit dwellings without easy access to home charging. Availability and costs to deploy infrastructure are the main challenges for light-duty EVs.

Medium- and heavy-duty vehicles are becoming more commercially available, with Daimler and Volvo obtaining CARB certification of their Class 6 and/or 8 battery electric trucks in 2020. Standards for charging infrastructure to support medium- and heavy-duty vehicles has generally been with the CCS1 connector in North America, with Volvo and ABB obtaining UL certification of the CCS2 connector in 2020, which is a connector standard predominantly used in Europe and other parts of the world. There is also an agreed upon SAE J3068 connector standard for single-phase and three-phase AC charging. The challenges and costs of installing medium- and heavy-duty charging infrastructure are exponentially increased compared to light-duty infrastructure. Each year there are more commercially available options for medium- and heavy-duty on-road vehicles and off-road equipment, charging infrastructure to support these vehicles and equipment, and an ability to fund larger scale deployment projects for medium- and heavy-duty vehicles, equipment, and infrastructure. As the deployment of medium- and heavy-duty vehicles and off-road equipment has increased, there is an increasing reliance on the use of standardized charging connectors and UL or Nationally Recognized Testing Laboratory (NRTL) charging infrastructure, as opposed to proprietary charging infrastructure and connectors which can only be used with vehicles and equipment manufactured by that OEM or equipment manufacturer.

The South Coast AQMD is actively pursuing development of intelligent transportation systems, such as Volvo's EcoDrive 2.0 software platform being utilized for the GGRF Zero Emission Drayage Truck (ZEDT) and Volvo LIGHTS projects, to improve traffic efficiency of battery electric and fuel cell electric drayage/freight trucks. This system provides truck drivers real-time vehicle operation feedback based on changing traffic and road conditions where trucks can dynamically change their speed to better flow through intersections. EcoDrive also uses geofencing capabilities to operate in zero emissions mode while traveling through disadvantaged communities. A truck eco-routing system can provide the eco-friendliest travel route based on truck engine/emission control characteristics, loaded weight, road grade and real-time traffic conditions. Integrated programs can interconnect fleets of electric drive vehicles with mass transit via web-based 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. As part of the demonstration of the Volvo diesel plug-in hybrid electric truck for the ZEDT project, this truck will be demonstrated in California for six months starting in November 2020 and data will be collected on the performance of

[20] Veloz is a non-profit advocacy organization promoting light-duty electric vehicles. https://www.veloz.org/sales-dashboard/
[21] https://cleanvehiclerebate.org/eng/rebate-statistics

EcoDrive 2.0 through the connector vehicle corridor in Carson that was set up as part of the CEC funded Eco FRATIS[22] freight transportation connected truck project.

This project category is one of South Coast AQMD's continued efforts to:

- deploy a network of DC fast charging infrastructure (350kW or more) and rapidly expand the existing network of public EV charging stations including energy storage systems;
- charging infrastructure and innovative systems to support medium- and heavy-duty vehicle and off-road equipment demonstration and deployment projects;
- support investigation of fast charging impact on battery life;
- develop intelligent transportation system strategies for cargo containers; and
- develop freight load-balancing strategies as well as to conduct market analysis for zero emission heavy-duty trucks in goods movement.

Potential Air Quality Benefits:

The 2016 AQMP identifies zero emission vehicles as a key attainment strategy. This proposed project category will reduce PM pollution along major roadways through the expansion of the public EV charging infrastructure network by allowing drivers to shift away from conventional-fueled vehicles to battery and fuel cell EVs. In addition, this project will assist in achieving improved fuel economy and lower tailpipe emissions, further helping the region to achieve NAAQS and protect public health. Expected benefits include the establishment of criteria for emission evaluations, performance requirements and customer acceptability of the technology. This will help both regulatory agencies and OEMs to expedite introduction of ZEVs in the Basin, which is a high priority of the 2016 AQMP.

[22] https://www.aapa-ports.org/files/PDFs/ITS%20POLA%204.24.2019.pdf

Proposed Project: Demonstrate Alternative Energy Storage

Expected South Coast AQMD Cost: $176,300

Expected Total Cost: $1,500,000

Description of Technology and Application:

The South Coast AQMD 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, new technologies, especially lithium-ion batteries have shown robust performance. Other technology manufacturers have also developed energy storage devices including beyond lithium-ion batteries, 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 benefits. Beyond lithium-ion batteries (e.g., lithium-sulfur, lithium-oxygen, sodium-ion, flow, and solid-state batteries) also have opportunities to achieve higher energy density, longer cycle life, and lower cost.

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, evaluate costs relative to current lithium-ion batteries 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-fueled vehicles. This effort will support several projects for development and demonstration of battery electric and hybrid electric vehicles using advanced energy storage 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.

Additionally, this project will also assess potential for second life uses of electric vehicle batteries for storage as well as the longer term more cost-effective recycling approaches currently in a nascent "pilot" stage, especially for metals such as lithium and cobalt.

Potential Air Quality Benefits:

Certification of battery electric and hybrid electric vehicles and engines and their integration into the Basin's transportation sector is a high priority under the 2016 AQMP. This project is expected to further efforts to develop alternative energy storage technologies that could be implemented in medium- and heavy-duty trucks, buses, off-road equipment, and other applications. Benefits will include proof of concept for new technologies, diversification of transportation fuels and lower emissions of criteria, toxic pollutants and greenhouse gases.

Proposed Project: Demonstrate Light-Duty Battery Electric and Plug-In Hybrid Vehicles

Expected South Coast AQMD 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 light-duty BEVs and PHEVs using advanced technology, mainly through showcasing this technology. Recent designs of light-duty BEVs and PHEVs provide increased electric range, improved efficiency and recharge times, and other advanced safety, energy, autonomous and performance features in new platforms and applications that can accelerate EV adoption.

South Coast AQMD has included BEVs and PHEVs as part of its demonstration fleet since the development of early conversion vehicles. South Coast AQMD also installed 92 Level 2 EV charging ports in 2017 and a DC fast charger with CHAdeMO and CCS1 connectors in 2018 to support public and workplace charging as a means of supporting education and outreach regarding BEV and PHEV technology.

Light-duty BEVs and PHEVs are available from most established OEMs and several new OEMs. Current legislation extends solo carpool lane access only for three years until September 2025.

Potential Air Quality Benefits:

The 2016 AQMP identifies the need to implement light-duty EVs. South Coast AQMD 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 BEVs. The proposed projects have the potential to accelerate commercial viability of BEVs and PHEVs. Expected immediate benefits include the deployment of ZEVs in South Coast AQMD's demonstration fleet. Over the longer term, the proposed projects could help foster wide-scale implementation of ZEVs 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 2016 AQMP.

Fueling Infrastructure and Deployment (Natural Gas/Renewable Fuels)

Proposed Project: Demonstrate Near-Zero emission Natural Gas Vehicles in Various Applications

Expected South Coast AQMD Cost: **$**440,750

Expected Total Cost: $2,000,000

Description of Technology and Application:

Natural gas vehicles (NGVs) have been very successful in reducing emissions in the Basin due to the deployment by fleets and owners and operators of heavy-duty vehicles utilizing this clean fuel. Currently, on-road heavy-duty natural gas engines are increasingly being certified to CARB's optional low-NOx standards which are significantly lower in NOx than the current on-road heavy-duty standard. This technology category seeks to support the expansion of OEMs producing engines or systems certified to the lowest optional NOx standard or near-zero emissions and useable in a wide variety of medium- and heavy-duty applications, such as Class 6 vehicles used in school buses and in passenger and goods delivery vans, Class 7 vehicles such as transit buses, waste haulers, street sweepers, sewer-vector trucks, dump trucks, concrete mixers, commercial box trucks, and Class 8 tractors used in goods movement and drayage operations and off-road equipment such as construction vehicles and yard hostlers. This category can also include advancing engine technologies to improve engine efficiencies that will help attract heavy-duty vehicle consumers to NGVs.

Potential Air Quality Benefits:

Natural gas-powered vehicles have inherently lower engine criteria pollutant emissions relative to conventionally fueled vehicles, especially older diesel-powered vehicles. Recently, on-road heavy-duty engines have been certified to near-zero emission levels that are 90% lower in NOx than the current on-road HDV standard. California's On-Road Truck and Bus Regulation requires all on-road HDVs to meet the current standard by January 1, 2023. The deployment of near-zero emission vehicles would significantly further emission reductions relative to the state's current regulatory requirements. Incentivizing the development and demonstration of near-zero emission NGVs in private and public fleets, goods movement applications, transit buses will help reduce local emissions and emissions exposure to nearby residents. Natural gas vehicles can also have lower greenhouse gas emissions and can increase energy diversity, help address national energy security objectives, and can reduce biomass waste when produced from such feedstocks. Deployment of additional NGVs is consistent with South Coast AQMD's AQMP to reduce criteria pollutants, and when fueled by RNG supports California's objectives of reducing GHGs and the carbon intensity of the state's transportation fuel supply, as well as the federal government's objective of increasing domestically produced alternative transportation fuels.

Proposed Project: Develop, Maintain & Expand Natural Gas Infrastructure

Expected South Coast AQMD Cost: $440,750

Expected Total Cost: $2,000,000

Description of Technology and Application:

This project supports the development, maintenance and expansion of natural gas fueling stations in strategic locations throughout the Basin, including the Ports, and advancing technologies and station design to improve fueling and refueling efficiencies of heavy-duty NGVs. This category supports the broader deployment of near-zero emission heavy-duty vehicles and the implementation of South Coast AQMD's fleet rules. In addition, as natural gas fueling equipment begins to age or has been placed in demanding usage, components will deteriorate. This project offers 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. Heavy-duty NGVs have significantly lower emissions than their diesel counterparts 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, and improving vehicle refueling times through improved refueling systems designs and high-flow nozzles. While new or improved NGV stations have an indirect emissions reduction benefit, they help facilitate the introduction of near-zero emission NGVs in private and public fleets in the area, which have a direct emissions reduction benefit. It is expected that natural gas' lower fuel cost relative to diesel and the added financial incentives of renewable natural gas (RNG) under the state's Low Carbon Fuel Standard program and the federal Renewable Fuel Standard program will significantly reduce operating costs of high fuel volume heavy-duty NGVs and attract consumers to this technology. 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 Renewable Transportation Fuel Manufacturing and Distribution Technologies

Expected South Coast AQMD Cost: $881,500

Expected Total Cost: $10,000,000

Description of Technology and Application:

The transportation sector represents a significant source of criteria pollution in the Basin. Clean, alternative fuel-powered transportation is a necessary component for this region to meet federal clean air standards. Alternative fuels produced from renewable sources such as waste biomass help to further efforts associated with landfill and waste diversion, greenhouse gas reduction, energy diversity and petroleum dependency. Locally produced renewable fuels further reduces concerns associated with out-of-state production and transmission of fuel as well as helps support the local economy. Renewable fuels recognized as a transportation fuel under the state's Low Carbon Fuel Standard program and the federal government's Renewable Fuel Standard program can provide financial incentives that can significantly reduce the price of fuel and hence the cost of operation of clean, alternative fuel vehicles and providing additional incentive for consumers to purchase and deploy clean, alternative renewable fueled powered vehicles.

The project category will consider the development and demonstration of technologies for the production and use of renewable transportation fuels such as renewable natural gas (RNG), renewable diesel (RD), and renewable hydrogen (RH) from various waste biomass feed stocks including municipal solid wastes, green waste, and biosolids from waste water treatment facilities, from technologies such as anaerobic digestion, gasification, and pyrolysis.

The main objectives of this project are to investigate, develop and demonstrate:

- commercially viable methods for converting renewable feed stocks into CNG, LNG, Hydrogen or diesel (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 RNG refueling facilities; and
- pipeline interconnection in the local gas grid to provide supply to users.

Potential Air Quality Benefits:

The South Coast AQMD relies on a significant increase in the penetration of zero and near-zero emission vehicles in the Basin to attain federal clean air standards by 2023 and 2032. This project would help develop a number of renewable transportation fuel production and distribution facilities to improve local production and use of renewable fuels to help reduce transportation costs and losses that can reduce total operating costs of zero and near-zero emission vehicles to be competitive with comparable diesel fueled vehicles. Such advances in production and use are expected to lead to greater infrastructure development. Additionally, this project could support the state's goal of redirecting biomass waste for local fuel production and reduce greenhouse gases associated with these waste biomass feedstocks.

Stationary Clean Fuel Technologies

Proposed Project: Develop and Demonstrate Microgrids with Photovoltaic/Fuel Cell/Battery Storage/EV Chargers and Energy Management

Expected South Coast AQMD Cost: $1,322,250

Expected Total Cost: $6,000,000

Description of Technology and Application:

CARB has proposed the Advanced Clean Truck Regulation which is part of a holistic approach to accelerate a large-scale transition of zero emission medium-and heavy-duty vehicles from Class 2B to Class 8. Manufacturers who certify Class 2B-8 chassis or complete vehicles with combustion engines would be required to sell zero emission trucks as an increasing percentage of their annual California sales from 2024 to 2030. By 2030, zero emission truck/chassis sales would need to be 50% of Class 4–8 straight trucks sales and 15% of all other truck sales.

The commercialization of zero emission heavy-duty trucks is currently under way with two of the largest manufacturers announcing plans for commercial products in the 2021-2022 timeframe to be introduced in Southern California. Both Daimler and Volvo, which are currently developing battery electric drayage trucks with the South Coast AQMD, are planning commercial products soon. Several fleet operators are planning large deployments of 50 to100 trucks, some at single site locations. Also, CARB is expected to announce in spring 2020 release of a solicitation that seeks projects to deploy 50 or more heavy-duty trucks at a single location. Ever larger deployments of zero emission trucks will be needed for the technology to have an impact on air quality.

Large deployments of zero emission Class 8 battery electric trucks (BET) each carrying 300+ kW hours of battery-stored energy or fuel cell trucks (FCT) carrying 30-50 kg of hydrogen will require costly infrastructure that creates a barrier for some fleets to adopt zero emission platforms. Many fleet operators do not own but lease their facilities making the capital expenditure of EV or hydrogen infrastructure impossible to recoup in a short period of time. Like the diesel vehicles they presently operate, fleets purchase fuel for their trucks, not the fueling station. Microgrids can be instrumental in meeting the challenge of providing large amounts of energy cost effectively for EV charging or hydrogen generation to support zero emission vehicle refueling. Additionally, if the microgrid equipment is owned by a third party and the energy sold to the fleet through a power purchase agreement, the financial challenge of a large capital investment can be avoided by the fleet operator.

A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid. A microgrid can connect and disconnect from the grid to enable it to operate in both grid-connected and island-mode. Microgrids can work synergistically with the utility grid to provide power for zero emission vehicle refueling by managing when energy from the grid is used–during off-peak hours when it is the least expensive. Then during peak demand periods, the microgrid would use energy from battery storage or onsite generation. Most all the technologies that make up microgrids already exist including photovoltaic, fuel cells, battery storage, along with hardware and software for the energy management system (EMS). When grid service is interrupted, the microgrid can disconnect from it and continue to operate as an energy island independent from the grid. Having assurance of an uninterrupted fueling source is an important consideration for a fleet operator. Also, if the microgrid is connected to the fleet operator's logistics system, additional benefits in terms of infrastructure cost and battery life for BETs can be realized. If the EMS is fed information on the route a truck is going to travel, it can charge the vehicle with enough energy for the trip so the truck will operate within 20-80% state of charge (SOC) of the battery having the least amount of impact to battery life. Additionally, if the EMS is connected to the logistics system, it can plan the charging schedules with 150 kW or less powerful chargers which again

will have less impact to battery life than the planned higher powered 300+ kW chargers and lower the costs for the charging infrastructure.

The energy demand of electric and fuel cell heavy-duty trucks is substantial; for a 100-vehicle fleet of BETs with 300 kW hours, batteries would require 30 MW hours/day of energy and for a 100-vehicle fleet of FCTs, 2000 kgs/day of hydrogen. Microgrids can provide energy for hydrogen and EV infrastructure and can serve to enable large zero emission vehicle deployments and make refueling economical and reliable. Staff has demonstrated several microgrid projects with the University of California Irvine and has toured the microgrid at University of California San Diego. Currently, several pilot projects are being discussed with microgrid developers and fleet operators that involve various configurations of microgrid technologies and different business models. Proposed projects would include development and demonstration of microgrids utilizing various types of renewable and zero emitting onsite generation (fuel cell tri-generation, power to gas, photovoltaic, wind), energy storage, connectivity to logistics systems, vehicle-to-grid and vehicle-to-building technologies. Also, projects that demonstrate different business models will be considered, such as projects involving a separate entity owning some or all the microgrid equipment and engaging in a power purchase agreement to provide energy to fleets that are transitioning to zero emission trucks. Proposed projects would partner with truck OEMs and their major customers, such as large- and medium-sized fleets looking at microgrid solutions for their operations here in the Basin.

Potential Air Quality Benefits:

Microgrids can support large deployments of zero emission medium- and heavy-duty trucks that are necessary to meet the AQMP target of a 45 percent reduction in NOx required by 2023 and an additional 55 percent reduction by 2031. Both renewable and zero emitting power generation technologies that make up a microgrid can provide a well-to-wheel zero emission pathway for transporting goods. 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 South Coast AQMD's ability to enforce full-time compliance.

Proposed Project: Develop and Demonstrate Renewables-Based Energy Generation Alternatives

Expected South Coast AQMD Cost: $264,450

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 applications. The technologies to be considered include thermal, photovoltaic and other solar energy technologies; wind energy systems; energy storage 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 potentially 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 2016 AQMP identifies the development and ultimately the implementation of non-polluting power generation. To gain the maximum air quality benefit, polluting fossil fuel-fired 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.

Fuel/Emissions Studies

Proposed Project: Conduct In-Use Emissions Studies for Advanced Technology Vehicle Demonstrations

Expected South Coast AQMD Cost: $500000

Expected Total Cost: $850,000

Description of Technology and Application:

Hybrid electric, hybrid hydraulic, plug-in electric hybrid and pure EVs will all play 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.

In addition, South Coast AQMD has been supporting rapid deployment of near-zero emission natural gas technologies ever since the first heavy-duty engine is commercially available in 2015. As more near-zero emission natural gas (now propane) technology penetrate the different segments, in-use assessment of real-world benefit is needed.

The CARB EMFAC model that the 2016 AQMP is based on uses emissions data from in-use emissions studies for calculating emission factors for heavy-duty trucks rather than the certification data. For the upcoming EMFAC 202x, a natural gas engine module is included for the first time with emissions data gathered from the 2017 South Coast AQMD funded in-use emissions characterization effort. The upcoming CARB and EPA low-NOx regulation focused on addressing the gap of in-use and certification values by introducing a new methodology that includes emissions from all operations. While staff do expect the in-use emissions from new engines perform closer to certification values, there are still significant population of the 2010+ legacy fleet expected to remain in service well over 2031. There is always a need to better assess real world truck emissions and fuel economy benefit from both engines, hybrid powertrain and zero emission technologies for continued technology improvements.

The environmental benefit for each technology class is 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, which 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 review and potentially coordinate application specific drive cycles to for 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 South Coast AQMD's air quality goals.

Proposed Project: Conduct Emissions Studies on Biofuels, Alternative Fuels and Other Environmental Impacts

Expected South Coast AQMD Cost: $400,000

Expected Total Cost: $1,500,000

Description of Technology and Application:

The use of biofuels can be an important strategy to reduce petroleum dependency, air pollution and greenhouse gas emissions and help with California's aggressive GHG reduction goal. Biofuels are in fact receiving increased attention due to national support and state activities resulting from SB 32, AB 1007 and the Low-Carbon Fuel Standard. 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 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 for certain engines and duty cycles, 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's 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. In 2019, the U.S. EPA approved 15% ethanol (E15) blends for year-round use and CARB, along with South Coast AQMD and other launched an emissions study of E15 to assess the emissions impact of the current fleet of California light duty vehicles.

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. Researchers has proposed to evaluate the emissions impact of renewable natural gas and other natural gas blends such as renewable hydrogen.

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.

More recently, the Power-to-Gas concept has renewed interest in hydrogen-fossil fuel blends which the emissions impact on latest ICE technologies needs to be reassessed. Hydrogen fueled ICE was studied heavily in the early 2000's and results has shown significant criteria emissions reduction possible with optimized engine calibration. Since then, ICE technologies have been fitted with advanced aftertreatment to allow the engines to be certified to today's NOx and low NOx standards. Therefore, emissions impact assessment is much needed on the latest engines.

Lastly, in an effort to evaluate the contribution of meteorological factors to high ozone and PM2.5 episodes

occurring in the Basin, mainly as a result of higher summer time temperatures and increased air stagnation following the drought years, a comprehensive study is necessary to evaluate the trends of meteorological factors that may adversely impact air quality in the Basin. The study will assist staff to better understand the potential impact of recent weather trends on criteria pollutant emissions and potentially develop more effective strategies for improving air quality in the future.

Potential Air Quality Benefits:
If renewable diesel, 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 SB 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 South Coast AQMD 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. Additionally, understanding meteorological factors on criteria pollutant emissions may help identify ways to mitigate them, possibly through targeted advanced transportation deployment.

Proposed Project: Identify and Demonstrate In-Use Fleet Emissions Reduction Technologies and Opportunities

Expected South Coast AQMD Cost: $220,375

Expected Total Cost: $1,000,000

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, commercial harbor craft 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. In the last a few years, real-time emissions and fuel economy data reporting along with telematics has been demonstrated with large fleets to as fleet management tools to identify high emitters and increase operational efficiency.

This project category is to investigate near-term emissions control technologies that can be cost-effectively 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;
- development, deployment and demonstration of smart vehicle telematic systems; and
- low NOx sensor development

Potential Air Quality Benefits:

Many of the technologies identified can be applied to light- 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. The identification and replacement of high-emitting vehicles has been identified in CERPs from the Year 1 AB 617 communities as a high priority for residents living in these communities, particularly as heavy-duty trucks frequently travel on residential streets to bypass traffic on freeways surrounding these disadvantaged communities.

Emissions Control Technologies

Proposed Project: Develop and Demonstrate Advanced Aftertreatment Technologies

Expected South Coast AQMD Cost: $500,000

Expected Total Cost: $2,000,000

Description of Technology and Application:

There are a number of aftertreatment technologies which have shown substantial emissions reductions in diesel engines. These technologies include zoned catalyst soot filters, early light -off catalysts, dual SCR systems, pre-NOx absorbers, and ammonia slip catalysts. Additional heating technologies enabled by availability of 48 volt battery system can be used to keep desired catalyst temperatures such as heated dosing and heated catalysts are also part of the complete aftertreatment system design towards near-zero emission NOx. 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 emissions 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 truck demonstrations beyond the lab based testing, retrofit applications, such as heavy-duty line-haul and other large displacement diesel engines, street sweepers, waste haulers and transit buses. Applications for non-road may include construction equipment, yard hostlers, gantry cranes, locomotives, commercial harbor craft, 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 early light –off SCR and heated dosing, could also have NOx reductions of up to 90%.

Proposed Project: Develop and Demonstrate Advanced Aftertreatment Catalyst Heating Technologies

Expected South Coast AQMD Cost: $220,375

Expected Total Cost: $1,000,000

Description of Technology and Application:

The objective of this project is to support the demonstration and integration of aftertreatment systems incorporating technologies such as heated dosing and electrically heated catalysts used for on-road heavy duty vehicles. Current aftertreatment systems are required to maintain an operating temperature of 200 °C or higher for optimal performance. Diesel engines for heavy duty commercial vehicles have been discovered to operate at temperatures below 200 °C during specific parts of the driving cycle, such as low loads and cold starts. Emissions during the low-load and cold starts have been shown to increase up to 30% and PM up to 20%. Previous technologies, such as the mini burner, were successful mitigating the cold catalyst issue. There were draw backs in this technology due to increased CO2 emissions. The mini burner was not favorable as a successful approach because it increased fuel consumption. New aftertreatment technologies, coupled with advanced engine and hybrid technologies, have shown potential to reduce emissions up to 99% without a fuel penalty. Technologies such as:

- Close-coupled catalysts
- Dual-heated diesel-exhaust fluid dosing
- Electronically heated catalysts

Current aftertreatment design incorporates a close-coupled catalyst, Diesel particulate filter, dual SCR, and an ammonia–slip catalyst. Included in this design is a required heat source at low loads, cold starts and motoring conditions. The use of an electric heat source has become feasible due to advancements in electrical-powered applications and integration with the vehicle. These heating technologies has been demonstrated under lab based testing but issues reside with further commercialization effort as the new CARB and EPA regulation significantly lengthening the warranty and durability requirements which could increase the cost and ultimate limit adoption of new and unproven technologies. Thus, large scale, OEM and supplier sponsored demonstration effort is needed to move these technologies forward.

Potential Air Quality Benefits:

This project is expected to contribute to the total emission reductions in heavy-duty on road engines. Emission reductions of 80-90% in heavy-duty diesel long-haul trucks has already been proven when an advanced aftertreatment system, incorporating an additional heat source, along with advanced engine technology such as cylinder deactivation is used. The fuel savings benefit is especially attractive to long-haul fleet operations. In order to meet the ultra-low NOx air quality standards and promote a national low NOx standard for heavy-duty diesel engines, an advanced aftertreatment system incorporating heated catalyst technology is required.

Proposed Project: Develop Methodology and Evaluate Onboard Emission Sensors for On-Road Heavy-Duty Vehicles

Expected South Coast AQMD Cost: $250,000

Expected Total Cost: $1,000,000

Description of Technology and Application:

New heavy-duty on-road vehicles represent one of the largest categories in the NOx emissions inventory in the Basin. In order to meet the 2023 and 2031 ozone standards, NOx emissions need to be reduced by 45% and an additional 55% from 2012 levels, respectively, mainly from mobile sources. Previous in-use emission studies, including studies funded by the South Coast AQMD, have shown significantly higher NOx emissions from on-road heavy-duty vehicles than the certification limit under certain in-use operations, such as low power duty cycles. In CARB's adopted Heavy-Duty On-Road "Omnibus" Low NOx regulation, in addition to the lower certification values, a low load test cycle and revisions to the not-to-exceed compliance tests. A NOx sensor data reporting are also introduced where the vehicle computer are required to store a past period of emissions data to ensure real-world emission reductions are realized over various duty cycles, especially those low power duty cycles in urban areas. An alternative proposed new methodology is to continuously measure real-time emissions from trucks with onboard sensors. Both industry, government and regulators are looking to use the sensors to better monitor emissions compliance and leverage the real-time data from sensors to enable advances concepts such as geofencing.

This project category is to investigate near term and long-term benefits from onboard sensors to understand in-use emissions better and reduce emissions from the advanced management concept. The first part of the project is to identify and conduct proof-of-concept demonstrations of feasible candidate technologies, such as:

- laboratory evaluation of existing sensors;
- development and evaluation of next generation sensors;
- development of algorithms to extract sensor information into mass-based metric;
- demonstrate feasibility to monitor emissions compliance using sensors;
- identify low cost option for cost and benefit analysis;
- demonstrate sensors on natural gas and other mobile sources such as light-duty, off-highway and commercial harbor craft; and
- development, deployment and demonstration of smart energy/emissions management systems

Potential Air Quality Benefits:

The proposed research projects will assist the trucking industry to monitor emissions, using sensors as one of the design platform options. Reduction of NOx and PM emissions from mobile sources is imperative for the Basin to achieve NAAQS and protect public health.

Proposed Project: Demonstrate On-Road Technologies in Off-Road and Retrofit Applications

Expected South Coast AQMD Cost: $176,300

Expected Total Cost: $800,000

Description of Technology and Application:

On-road heavy-duty 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 off-road 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, commercial harbor craft 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 off-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 Effects

Expected South Coast AQMD Cost: $88,150

Expected Total Cost: $1,000,000

Description of Technology and Application:

Reducing diesel exhaust from vehicles has become a high priority in the Basin since CARB identified the particulate phase of diesel exhaust as a surrogate for all of the toxic air contaminants emitted from diesel exhaust. Additionally, health studies indicate that the ultrafine particulate matter (UPM) 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 UPM 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 new technologies and health effects of these emissions, an evaluation and comparison of UPM and the potential impacts on community exposure, particularly in disadvantaged communities, is needed.

In this project, measurements and chemical composition of UPM will be done, as well as studies conducted to characterize their toxicity. The composition of PM 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 UPM, 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 technologies, and new engine development 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. Based on initial results indicating an increase in particle numbers, follow-up in-use studies to assess PM emissions including with and without particle filters will be beneficial.

Potential Air Quality Benefits:

The AQMP for the Basin relies on significant penetration of low emission vehicles to attain federal clean air standards. Reduction of PM 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 number of UPM generated by different types of fuels and advanced control technologies as well as provide information on potential health effects of UPM. 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 South Coast AQMD Cost: $132,225

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, freight/logistics distribution centers and freeways is important to identify emissions exposure to surrounding communities and provide data to assess health impacts. This project category would identify areas of interest and conduct ambient air monitoring, emissions monitoring, analyze data and assess potential health impacts from mobile sources. These projects would need to be at least one year in duration in order to properly assess air quality impacts in surrounding communities.

Potential Air Quality Benefits:

The proposed project will assist in 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, particularly in disadvantaged communities; 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 Toxic Air Contaminants

Expected South Coast AQMD Cost: $132,225

Expected Total Cost: $300,000

Description of Technology and Application:

Previous studies of ambient levels of toxic air contaminants, such as the MATES studies, have found that diesel exhaust is the major contributor to health risk from air toxics. Analyses of diesel particulate matter (DPM) in ambient samples have been based on measurements of elemental carbon. While the bulk of particulate elemental carbon in the 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 Basin. Analysis of particulate bound organic compounds was utilized as tracers to estimate levels of ambient DPM as well as estimate levels of PM 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, completed in 2015, included an air monitoring program and updated emissions inventory of toxic air contaminants. MATES IV also measured UPM concentrations and black carbon at monitoring sites as well as near sources such as airports, freeways, rail yards, busy intersections and freight/logistics warehouse operations.

MATES V was launched in 2017 to update the emissions inventory of toxic air contaminants and modeling to characterize risks, including measurements and analysis of UPM concentrations typically emitted or converted from vehicle exhaust. In addition, staff are also performing additional advanced monitoring activities as an extension of the MATES V study.

This project category would include other related factors, such as toxicity assessment based on age, source (heavy-duty, light-duty engines) and composition (semi-volatile or non-volatile fractions) to better understand health effects and potential community exposure, particularly in disadvantaged communities. 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 DPM as well as levels of PM from other significant combustion sources, including gasoline and diesel generated VOCs. This will allow a better estimation of potential exposure and health effects from toxic air contaminants from diesel exhaust in the Basin. This information in turn can be used to determine health benefits of promoting clean fuel technologies.

Technology Assessment/Transfer and Outreach

Proposed Project: Assess and Support Advanced Technologies and Disseminate Information

Expected South Coast AQMD Cost: $352,600

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 South Coast AQMD's outreach efforts by coordinating activities with other organizations to expedite the implementation of advanced engines and clean fuels technologies.

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;
- emission studies and assessments of near-zero and zero-emission alternatives;
- preparation of reports, presentations at conferences, improving public relations and public communications of successful clean technology demonstrations;
- participation in and coordination of workshops and various meetings;
- support for training programs related to fleet operation, maintenance and refueling of alternative fuel vehicles and equipment;
- publication of technical papers as well as reports and bulletins; and
- dissemination of information, including websites development and updates.

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/equipment and associated infrastructure.

Potential Air Quality Benefits:

South Coast AQMD adopted fleet regulations requiring public and private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. The benefits of highlighting success stories in the use of advanced alternatively fueled vehicles could expedite the acceptance and commercialization of advanced technologies. Especially, by the operators seeking to comply with the provisions of the South Coast AQMD fleet rules. The emission reduction benefits will contribute to the goals of the AQMP.

Proposed Project: Support Implementation of Various Clean Fuels Vehicle Incentive Programs

Expected South Coast AQMD Cost: $264,450

Expected Total Cost: $400,000

Description of Project:

This project supports the implementation of incentive programs, including the state and federal grant programs, the Carl Moyer, lower emission school bus, Replace Your Ride Programs and the South Coast AQMD residential EV charger rebate program. Implementation support includes application review, funds allocation, equipment owner reports collection, documentation to the CARB, verification of vehicle operation, and other support as needed. Information dissemination is critical to successfully implementing the coordinated and comprehensive incentive programs. Outreach will be directed to vehicle dealers, individuals and fleets. To date, the South Coast AQMD residential EV charger rebate program has provided over 1,500 rebates, totaling $416,087. The total available funds of $1 million is consisted with $500,000 from South Coast AQMD Clean Fuels Fund and $500,000 from the Mobile Source Air Pollution Reduction Review Committee (MSRC).

Potential Air Quality Benefits:

As described earlier, the South Coast AQMD will provide matching funds to implement several key incentives programs to reduce diesel emissions in the Basin. Furthermore, the South Coast AQMD adopted fleet regulations requiring public and private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. The benefits of highlighting zero emission vehicle incentives could potentially expedite the acceptance and commercialization of advanced technologies by operators seeking to comply with the South Coast AQMD fleet rules provisions. The result of future emission reduction benefits will contribute to the goals of the AQMP. The lower emission school bus, AB 617 Community Air Protection, Volkswagen Environmental Mitigation Trust and Carl Moyer incentives programs could reduce large amounts of NOx and PM emissions, and toxic air contaminants in the Basin.

Appendix A

South Coast AQMD Advisory Groups

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Technology Advancement Advisory Group[1]

Dr. Matt Miyasato, Chair	South Coast AQMD
Don Anair	Union of Concerned Scientists
Chris Cannon	Port of Los Angeles
Steve Cliff	California Air Resources Board
Dr. Michael Kleinman	University of California Irvine
Yuri Freedman	Southern California Gas Company
George Payba	Los Angeles Department of Water and Power
Phil Heirigs	Western States Petroleum Association
Vic La Rosa	Total Transportation Solutions Inc.
Tim Olson	California Energy Commission
David Pettit	Natural Resources Defense Council
Dr. Sunita Satyapal	Department of Energy
Heather Tomley	Port of Long Beach
*Laura Renger	Southern California Edison

*Newly appointed member

[1] Members as of February 19, 2021

SB 98 Clean Fuels Advisory Group[2]

Dr. Matt Miyasato, Chair	South Coast AQMD
*Keith Brandis	Volvo Group
Dr. John Budroe	California Environmental Protection Agency, Office of Environmental Health Hazard Assessment
Dr. John Wall	Independent Consultant in Combustion Technology
Dr. Mark Duvall	Electric Power Research Institute
Dr. Mridul Gautam	West Virginia University, Adjunct Professor, & University of Nevada-Reno
Dr. Wayne Miller	University of California, Riverside, College of Engineering, Center for Environmental Research and Technology
Dr. Petros Ioannou	University of Southern California Director of the Center for Advanced Transportation Technologies
Dr. Scott Samuelsen	University of California, Irvine, Combustion Laboratory/National Fuel Cell Research Center
Dr. Robert Sawyer	Sawyer Associates
Andreas Truckenbrodt	Independent Consultant in Fuel Cell Technologies
Kevin Walkowicz	National Renewable Energy Laboratory
*Dwight Robinson	Mortimer & Wallace, Inc.

*Newly appointed member

[2] Members as of February 19, 2021

Appendix B

Open Clean Fuels Contracts as of January 1, 2021

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Contract	Contractor	Project Title	Start Term	End Term	South Coast AQMD $	Project Total $
Hydrogen and Mobile Fuel Cell Technologies and Infrastructure						
15366	Engineering, Procurement & Construction, LLC.	Operate and Maitain Publicly Accessible Hydrogen Fueling Station at SCAQMD's Diamond Bar HQs	10/10/14	04/09/21	0	0
15611	Ontario CNG Station, Inc.	Installation of Ontario Renewable Hydrogen Fueling Station	07/10/15	07/09/21	200,000	2,510,000
15618	FirstElement, Inc.	Installation of Eight Hydrogen Stations in Various Cities	02/05/16	02/04/21	1,000,000	16,442,000
16251	H2 Frontier Inc.	Develop & Demonstrate Commercial Mobile Hydrogen Fueler	05/06/16	05/05/21	200,000	1,665,654
17059	CALSTART Inc	Develop and Demonstrate Fuel Cell Extended Range Powertrain for Parcel Delivery Trucks	10/27/16	02/28/21	589,750	1,574,250
17312	Hydrogenics USA, Inc.	ZECT II - Develop Fuel Cell Range-Extended Drayage Truck	11/20/17	05/19/21	1,109,279	2,433,553
17317	American Honda Motor Company, Inc.	Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle	03/22/17	03/22/21	22,120	22,120
17343	American Honda Motor Company, Inc.	Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle	02/21/17	02/21/21	22,188	22,188
17385	American Honda Motor Company, Inc.	Three Year Lease of One Honda 2017 Clarity Fuel Cell Vehicle	05/17/17	05/17/21	22,285	22,285
18150	California Dept of Food and Agriculture, Division of Measurement Standards	Conduct Hydrogen Station Site Evaluations for Hydrogen Station Equipment Performance	06/28/18	02/27/21	100,000	805,000
18158	National Renewable Energy Laboratory	California Hydrogen Infrastructure Research Consortium H2 @ Scale Initiative	08/01/18	03/30/21	100,000	760,000
19172	Longo Toyota	Three Year Lease of Two 2018 Toyota Mirai Fuel Cell Vehicles	10/28/18	10/27/21	35,108	35,108
19248	Tustin Hyundai	Three Year Lease of 2019 Fuel Cell Hyundai Nexo	03/07/19	03/06/22	25,193	25,193
19313	Equilon Enterprises LLC DBA Shell Oil Products	Construct & Operate Renewable Hydrogen Refueling Station	06/30/20	04/01/22	1,200,000	12,000,000
20038	University of California, Irvine	Expansion of the UCI Hydrogen Refueling Station	10/18/19	02/17/27	400,000	1,800,000
20108	University of California, Irvine	Develop Optimal Operation Model for Renewable Electrolytic Fuel Production	06/17/20	06/16/21	100,000	500,000
Engine Systems and Technologies						
19439	Cummins, Inc.	Natural Gas Engine and Vehicles Research and Development - Natural Gas Specific Combustion Design	08/30/19	08/29/23	250,000	10,996,626
20092	Southwest Research Institute	Natural Gas Engine and Vehicles Research and Development - Pent-Roof Medium Duty Natural Gas Engine	10/14/20	04/13/24	475,000	6,000,000

Contract	Contractor	Project Title	Start Term	End Term	South Coast AQMD $	Project Total $
Engine Systems and Technologies (cont'd)						
20122	Landi Renzo USA Corporation	Develop and Commercialize a Near-Zero Natural Gas Conversion System for On-Road Medium-Duty Vehicles	01/17/20	07/31/21	300,000	1,455,072
20316	US Hybrid	Natural Gas Engine & Vehicles Research & Development - Plug-In Hybrid CNG Drayage Truck	06/02/20	12/01/23	500,000	2,853,006
17353	Odyne Systems, LLC	Develop and Demo Medium-Heavy Duty (Class 5-7) Plug-In Hybrid Electric Vehicles for Work Truck Applications	06/09/17	02/28/22	900,000	6,955,281
Electric/Hybrid Technologies and Infrastructure						
14184	Green Paradigm Consulting, Inc.	DC Fast Charging Network Provider	04/04/14	06/30/23	390,000	1,210,000
16081	Broadband Telcom Power Inc	Provide EV Hardware and Control System at SCAQMD Headquarters Including Installation Support, Warranty and Networking	04/27/16	04/26/22	367,425	689,850
17065	Green Paradigm Consulting, Inc.	EV Infrastructure Installer	12/02/16	12/31/21	805,219	805,219
17105	BYD Motors, Inc.	Development and Demonstration of up to 25 Class 8 Battery Electric Drayage Trucks	04/14/17	10/13/23	2,294,436	8,942,400
17207	Peterbilt Motors	Development and Demonstration of up to 12 Class 8 Battery Electric Drayage Trucks	04/07/17	10/06/23	2,342,436	11,082,340
17225	Volvo Technology of America, LLC	Development and Demonstration of up to 2 Class 8 Battery Electric Drayage Trucks	06/09/17	12/31/21	2,341,184	9,811,447
17244	Kenworth Truck Company	Development & Demonstration of four Class 8 CNG Hybrid Electric Drayage Trucks	09/08/17	04/14/21	2,239,106	6,492,238
17316	Center for Transportation and the Environment	Develop and Demonstrate 10 Zero-Emission Fuel Cell Electric Buses	06/09/17	03/31/21	1,000,000	45,157,859
18075	Selman Chevrolet Company	Lease Two 2017 Chevrolet Bolt All-Electric Vehicles for Three Years	08/18/17	02/18/21	30,892	30,892
18129	Electric Power Research Institute	Versatile Plug-In Auxilary Power System Demonstration	06/28/18	10/31/21	125,000	273,000
18151	Rail Propulsion System	Develop & Demonstrate Battery Electric Switcher Locomotive	04/05/18	12/30/21	0	925,000
18232	Hyster-Yale Group Inc	Electric Top-Pick Development, Integration & Demonstration	09/14/18	09/13/21	367,801	3,678,008
18277	Velocity Vehicle Group DBA Los Angeles Truck Centers, LLC	Southern California Advanced Sustainable Freight Demonstration	09/07/18	03/06/22	582,305	4,198,000
18280	Honda of Pasadena	Three-Year Lease of One Honda 2018 Clarity Plug-In Vehicle	02/07/18	06/26/21	18,359	18,359
18287	Evgo Services, LLC	Charging Station and Premises Agreement for Installation of One DCFC at SCAQMD Headquarters	06/27/18	06/26/28	0	0

Contract	Contractor	Project Title	Start Term	End Term	South Coast AQMD $	Project Total $
Electric/Hybrid Technologies and Infrastructure (cont'd)						
18397	Port of Long Beach	Demonstrate Zero Emission Cargo Handling Vehicle at POLB	01/04/19	05/31/21	350,000	8,668,410
19166	Phoenix Cars, LLC dba Phoenix Motorcars	Battery Electric Shuttle Bus Replacement Project	01/31/19	01/30/22	0	7,311,456
19182	Los Angeles County	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	01/03/19	01/03/22	0	0
19183	Southern California Public Power Authority	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	01/10/19	01/10/22	0	0
19202	City of Compton	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/11/19	04/10/22	0	0
19250	Baldemar Caraveo	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	03/06/19	03/06/22	0	0
19251	Gary Brotz	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	03/27/19	03/26/22	0	0
19252	Hui Min Li Chang	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	03/29/19	03/28/22	0	0
19253	Jennifer Chin	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/19/19	04/18/22	0	0
19254	Liping Huang	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/11/19	04/18/22	0	0
19255	Ramona Manning	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/05/19	04/04/22	0	0
19256	Tony Chu	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/04/19	04/03/22	0	0
19278	Volvo Group North America, LLC	Low Impact Green Heavy Transport Solutions (LIGHTS) - Develop and Demonstrate Zero Emissions Heavy-Duty Trucks, Freight Handling Equipment, EV Infrastructure and Renewable Energy	04/17/19	06/30/21	4,000,000	91,246,900
19279	Douglas Harold Boehm	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	03/29/19	03/28/22	0	0
19280	Emile I. Guirguis	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/19/19	04/18/22	0	0
19281	Helen Chi	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	03/27/19	03/26/22	0	0
19282	Hosneara Ahmed	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/05/19	04/04/22	0	0
19283	Hsuan Hu	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	03/27/19	03/26/22	0	0
19284	Jyi Sy Chiu	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/05/19	04/04/22	0	0
19285	Mercedes Manning	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/19/19	04/18/22	0	0
19286	Monica Sii	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/19/19	04/19/22	0	0
19287	Quei-Wen P Yen	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	03/29/19	03/28/22	0	0

Contract	Contractor	Project Title	Start Term	End Term	South Coast AQMD $	Project Total $
Electric/Hybrid Technologies and Infrastructure (cont'd)						
19288	Rae Marie Johnson	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/05/19	04/04/22	0	0
19289	Yilong Yang	Disburse Donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/09/19	04/08/22	0	0
19290	University of California, Riverside	Perform Data Collection, Analysis, and Reporting for CARB's ZANZEFF Project	02/15/19	06/30/21	836,258	836,258
19295	Ivan Garcia	Disburse donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/11/19	04/10/22	0	0
19296	Jamei Kun	Disburse donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/19/19	01/18/22	0	0
19297	Laizheng Wei	Disburse donated Mercedes-Benz USA, LLC. Electric Vehicle Chargers	04/19/19	04/18/22	0	0
19438	Puente Hills Hyundai LLC	Lease Two 2019 Hyudai Kona EVs for Three Years	06/06/19	06/05/22	61,156	61,156
20054	Puente Hills Hyundai LLC	Lease One 2019 Hyundai Kona EV for Three Years	08/23/19	08/22/22	29,640	29,640
20097	Zeco Systems, Inc. DBA Greenlots	Operate, Maintain and Network the EV Chargers	02/14/20	02/13/23	155,664	155,664
20124	Volvo Technology of America LLC	Develop & Demonstrate Battery-Electric Excavator & Wheel Loader	09/01/19	02/28/21	0	2,000,000
20125	Roush Cleantech, LLC	Develop and Demonstrate Battery Electric Medium-Duty Truck	03/19/20	03/18/22	937,500	3,200,000
20168	OMNITRANS	Disburse donated Mercedes-Benz USA, LLC Electric Vehicle Chargers	02/28/20	02/27/23	0	0
20248	Los Angeles County Economic Development Corp	Economic and Workforce Impact Analysis of Electric Revolution in Southern California	07/07/20	01/02/21	10,000	150,000
Fueling Infrastructure and Deployment (NG/RNG)						
17092	Kore Infrastructure LLC	RNG Production & Vehicle Demonstration	10/14/16	10/13/21	2,500,000	25,500,000
18336	Abc Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	117,900	676,500
18337	Alta Loma School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	78,600	423,000
18344	Bellflower Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	09/07/18	11/30/34	39,300	225,500
18346	Chaffey Joint Union High School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	235,800	1,269,000
18348	Cypress School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	09/07/18	11/30/34	39,300	211,500
18349	Downey Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	09/14/18	11/30/36	157,200	902,000
18350	Fountain Valley School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	09/07/18	11/30/34	39,300	211,500

Contract	Contractor	Project Title	Start Term	End Term	South Coast AQMD $	Project Total $
Fueling Infrastructure and Deployment (NG/RNG) (cont'd)						
18351	Fullerton Joint Union High School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	157,200	846,000
18355	Huntington Beach Union High School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	589,500	3,382,500
18363	Orange Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	09/14/18	11/30/34	39,300	225,500
18364	Placentia-Yorba Linda Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	235,800	1,353,000
18365	Pupil Transportation Cooperative	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	196,500	1,127,500
18367	Rialto Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	510,900	2,931,500
18368	Rim Of The World Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/05/18	11/30/34	513,600	676,500
18369	Rowland Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	11/02/18	11/30/34	117,900	770,000
18374	Upland Unified School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	10/12/18	11/30/34	157,200	902,000
20178	Whittier Union High School District	Replace Diesel School Buses with Near-Zero Emissions CNG Buses	02/21/20	11/30/34	196,500	1,052,500
Fuel/Emissions Studies						
17276	University of California, Riverside	Development of ECO-ITS Strategies for Cargo Containers	08/03/17	01/31/21	543,000	2,190,233
17352	California State University, Maritime Academy	Develop and Demonstrate Vessel Performance Management Software and Equipment	06/09/17	06/08/21	50,086	195,915
18090	University of California, Riverside	Study Secondary Organic Aerosol Formation from Heavy-Duty Diesel and Natural Gas Vehicles	12/05/17	02/28/21	85,000	85,000
19208	University of California, Riverside	Conduct Emission Study on Use of Alternative Diesel Blends in Off-Road Heavy Duty Engines	06/21/19	07/31/21	261,000	1,353,499
20058	University of California, Riverside	Evaluate Meteorological Factors and Trends Contributing to Recent Poor Air Quality in Basin	08/23/19	02/23/21	188,798	188,798
Technology Assessment and Transfer/Outreach						
08210	Sawyer Associates	Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities	02/22/08	02/28/22	50,000	50,000
09252	JWM Consulting Service	Technical Assistance with Review and Assessment of Advanced Technologies, Heavy-Duty Engines and Conventional and Alternative Fuels	12/20/08	06/30/22	30,000	30,000
12376	University of California, Riverside	Technical Assistance with Alternative Fuels, Biofuels, Emissions Testing, and Zero-	06/01/14	05/31/22	225,000	225,000

		Emission Transportation Technology				
Contract	**Contractor**	**Project Title**	**Start Term**	**End Term**	**South Coast AQMD $**	**Project Total $**
Technology Assessment and Transfer/Outreach (cont'd)						
16262	University of California, Davis-Institute of Transportation Studies	Support Sustainable Transportation Energy Pathways (STEPs) 2015-2018 Program	01/05/18	01/04/22	240,000	5,520,000
17097	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alt Fuels and Fueling Infrastructure, Emissions Analysis and On-Road Sources	11/04/16	06/30/21	200,000	200,000
17358	AEE Solutions, LLC	Technical Assistance with Heavy-Duty Vehicle Emissions Testing, Analyses & Engine Development	06/09/17	05/31/21	200,000	200,000
19078	Green Paradigm Consulting, Inc.	Technical Assistance with Alternative Fuels, Evs, Charging & Infrastructure and Renewable Energy	09/07/18	09/30/22	200,000	540,300
19227	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alternative Fuels & Fueling Infrastructure, Emissions Analysis & On-Road Sources	02/01/19	01/31/21	200,000	200,000
19302	Hydrogen Ventures	Technical Assistance with Hydrogen Infrastructure and Related Projects	04/24/19	04/23/21	50,000	50,000
20085	CALSTART, Inc	Technical Assistance for Development & Demonstration of Infrastructure and Mobile Source Applications	11/08/19	11/07/21	150,000	150,000
20163	Gladstein, Neandross & Associates, LLC	Technical Assistance with Implementation & Outreach Support for California VW Mitigation Trust Fund	01/21/20	01/21/22	26,000	26,000
20265	Eastern Research Group	Technical Assistance with Heavy-Duty Vehicle Emissions Testing, Analyses & Engine Development & Applications	06/17/20	06/16/22	50,000	50,000
20348	Gladstein, Neandross & Associates, LLC	Cosponsor the 2021 Renewable Gas 360 Symposium and Webinar Series	07/21/20	03/31/21	35,000	150,000
21078	Charging Interface Initiative (CharIn) e.V.	Cosponsor High Power Charging for Commercial Vehicles Event	09/16/20	01/31/21	12,500	240,000

Appendix C

Final Reports for 2020

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South Coast AQMD Contract #15609 **January 2020**

Installation of Riverside Renewable Hydrogen Fueling Station

Contractor
ITM Power Inc.

Cosponsors
California Energy Commission (CEC)
South Coast AQMD

Project Officers
Patricia Kwon,
Lisa Mirisola

Background
This project saw a hydrogen refueling station installed in Riverside, CA. The hydrogen is produced in part by an on-site electrolyzer using renewable electricity to produce zero carbon fuel. This station will offset up to 250 gallons per day of gasoline therefore improving air quality and reducing greenhouse gasses (GHGs) in California.

Project Objective
The project objective was to build and install a publicly accessible hydrogen fueling station in Riverside, CA. A total of 33% of the maximum capacity of the station will be generated on site via renewable electrolysis. The station will be capable of delivering up to 100kg per day with a 35kg per hour peak fueling capacity. The dispenser will be compliant with California Division of Measurement Standards (DMS) requirements to sell hydrogen on a per kg basis. The station will also provide fill data collection in the National Renewable Energy Laboratory (NREL) template as approved by the California Energy Commission (CEC).

Technology Description
The station uses an on-site electrolyser to split water using renewable electricity therefore producing zero carbon fuel for use in hydrogen fuel cell vehicles. The hydrogen is compressed and stored in high pressure tubes and dispensed to vehicles in both 350 and 700 Bar pressures.

This station produces 33% of its capacity using electrolysis and 67% of the gas is provided by delivered tube trailer. This allows the site to be expanded easily in the future and allows up to 33kg of hydrogen per day to be generated from renewable sources.

Status
The project is currently deemed open to the public which means that the following milestones have been reached:

1. Installation of all station equipment and sign off by equipment provider
2. Installation of all security fences, bollards & signage to allow for unattended operation
3. Energize all equipment and run the system to enable the storage tanks to be filled with hydrogen
4. Carry out initial inspection by local fire and electrical officials
5. Carry out test fills from the vehicle dispenser to confirm fuel protocol compliance
6. Carry out a fuel gas sample to confirm compliance with fuel quality standards
7. Open to public and dispense fuel

Figure 1: Installed Dispenser at Site

Results
The station has been installed and commissioned and has been operational for 3+

years.

The station hydrogen has been sampled and analyzed multiple times in accordance with Society of Automotive Engineers J2719 and found to be within tolerance.

To date the station has dispensed over 34,800kg of fuel

Benefits

This station has the capacity to displace 250 gallons of gasoline per day.

This is the only hydrogen station in the Inland Empire and provides a basis for vehicle original equipment manufacturers (OEMs) to deploy hydrogen cars in the region. It also provides a refueling stop for customers wishing to travel as far as Palm Springs, Joshua Tree and beyond.

Project Costs

The CEC project costs met the original budget parameters of $2,125.000. Below is the final cost breakdown.

Project Funding:

California Energy Commission	$2,125,000
South Coast AQMD	$200,000
Match Funding	$409,184
Total	$2,734,184

Commercialization and Applications

The technology utilized in this project relied entirely on vehicle deployment. Vehicle OEMs have begun deployment of fuel cell vehicles in the local area and ITM Power, Inc. has already contacted several early adopters for the technology. ITM Power, Inc. has also begun to reach out to local fleet operators to try to increase fuel at the site and boost the commercialization of this station.

The site would benefit from the creation of a large expansion space to accommodate a larger electrolyser. It would also benefit from the installation of rooftop PV to generate electricity on the site.

Figure 2: Fuel Site Entrance Sign

South Coast AQMD Contract #15619 **December 2020**

Installation of Chino Renewable Hydrogen Station

Contractor

H2 Frontier Inc
PowerTech Labs
ITM Power

Cosponsors

California Energy Commission (CEC)
South Coast AQMD
Hyundai R&D

Project Officer

Lisa Mirisola

Background

Automakers targeted a 2015 roll-out of hydrogen fuel cell vehicles (FCEV), making the availability of hydrogen fueling stations critically important. FCEVs play an important role in the transition of the mobile transportation sector which will help promote zero emission technologies. These new technologies are necessary to attain the federal criteria pollutant standards as well as the state greenhouse gas targets. As part of this transition, hydrogen refueling facilities for these vehicles must be expanded to satisfy the impending vehicle roll-out by the automakers.

Project Objective

The goal of this project was to establish a hydrogen station having both 350 Bar and 700 Bar dispensing capabilities utilizing a renewable source of fuel, with the flexibility to meet the anticipated demand of the future. To achieve this goal, it would be necessary to deploy a station in a high value area while creating a cost-effective design. The station would need to use a 100% renewable source of hydrogen fuel and provide the ability to sell hydrogen thru a Point-of-Sale terminal at the dispenser location while providing a system design that would be easily upgradable to meet future demand.

Technology Description

It was determined that the 100% renewable energy credits will be purchased over a three-year period to provide the electricity to generate hydrogen by electrolysis. While this is not groundbreaking technology, the high discharge pressure is. The electrolyser provider, ITM Power, promised to deliver an 80 Bar discharge pressure system from the four Proton Exchange Membrane (PEM) stack. This higher pressure is well above the industry standard of 30 Bar. This improvement in pressure allows the station design to use one less compressor to reach 950 Bar storage pressure. Less compressors mean a smaller equipment footprint and less maintenance/operational costs. This helps reduce overall capital costs. These costs are currently extremely high and are a hindrance in propelling this technology to the mainstream public.

Due to the nature of electrolysis and its high demand for reverse osmosis in the form of deionized water (where two-thirds of the flow stream is rejected and not used), a 600-gallon subterranean water tank was installed, with a pump to collect and use this water for both street sweepers and irrigation at the facility.

Compression, storage and dispensing (CSD) equipment was provided by PowerTech Labs. The equipment consisted of a 26’ container housing a Hydropac compressor, a control/data room and a chiller for the compressor. Hydrogen is stored in one large buffer tank between the electrolyser and compressor, consisting of six 950 Bar Fiba brand high-pressure tubes. Overall storage of less than 100 kilograms was required by the local fire department. Since the electrolyser is an on-demand generator, the smaller storage system helps reduce cost and footprint. The dispenser has both 350 and 700 Bar nozzles at -40C, dispensing to light duty and forklift fuel cell vehicles using the latest Society of Automotive Engineers (SAE) J 2601 standard. This system design can produce 100 kg/day with 35 kgs peak per hour reliably.

Status

Compression, storage and dispensing equipment has been purchased, installed and commissioned to SAE J2601 and SAE 2719 standards. The dispensing system has provided many successful fills for Hyundai’s VIP dignitaries on multiple

occasions. This has been achieved using hydrogen (H2) tube trailer delivery.

The fire department's final permit has been signed off on as has the electrical permit. The final building permit is waiting for the remainder of generation equipment.

A specification of 80 Bar discharge pressure was originally offered by ITM Power but has not been delivered. Powertech engineered their equipment (CSD) to meet the 35kg/hr requirement based on the 80 Bar discharge pressure. It allowed us to have one less compressor. Without this higher 80 Bar discharge pressure, the station design cannot meet the 35 kilograms back to back dispensing requirement. The original design pressure of 80 Bar was reduced to 50 Bar due to the inability of ITM to meet certain standards. Currently the ITM website shows only 20 Bar for their PEM stacks so this modified offer of 50 Bar is still questionable.

A revised Factory Acceptance Test with 10 hot starts (already at temp and pressure) and 10 cold starts (ambient temp and pressure) with 2 weeks continuous runtime data would be sufficient to accept a lower performance stack, but tests yielded only 2 cold starts, plenty of warm starts and only 8 continuous hours of runtime data.

There was enough money remaining in the budget to purchase a 30 Bar electrolyser and install it before contract expiration date. A letter requesting this change was sent to the CEC, but CEC immediately issued a stop work order. Any change of electrolysis vendors would require us to complete the project with private investment.

All ownership and assets of the Chino station returned to the CEC who reduced the performance criteria from 35 kgs peak to just 20 kgs peak and awarded the station to ITM. It has been almost a year since then and no visible progress has been seen onsite.

Benefits

In addition to criteria emission reductions, this project represents an investment in clean economical FCEV transportation to help meet California's climate goals. The project was designed to reduce emissions of greenhouse gasses (GHG) by lowering the carbon content of transportation fuels in California. The hydrogen fuel cell environmental footprint is much smaller than the gasoline baseline and achieves 100% GHG emission reduction using renewable electricity and on-site electrolysis. The on-site system removes the requirement for a diesel vehicle to deliver hydrogen, which means that this system is essentially zero carbon. In summary a 100 kg per day station that is operating at full usage could be expected to offset 200 gallons of petrol per day and therefore 24,000MJ of energy and 2,300 kg's of C02 per day. At 100% capacity it is estimated that the annual savings would be 839.5 metric tons of C02.

Project Costs

This project was not completed within the proposed budget. There were many delays and cost overruns. On November 19, 2012, the CEC released a competitive Grant Solicitation PON-12-606 entitled "Hydrogen Fuel Infrastructure" under the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP).

Organization	Funding
CEC	$3,000,000
South Coast AQMD	$ 200,000
H2Frontier, PowerTech and ITM Power	$1,414,384
Total	$4,614,384

Commercialization and Applications

This project would not have been profitable, assuming Renewable Energy Credits (REC's) at $0.18 per KW and 65 Kw per kilogram results in $11.70 per kg just for hydrogen generation. The cost of electricity to operate adds another $0.25 per kg for compression cooling and dispensing. This cost estimate would be $4.50 + $11.70=$16.20 cost per kg. Not including cost of water, the retail sale of hydrogen would have to be above $18 just to break even without counting maintenance costs. A 100% renewable station perhaps was a little early in the commercialization of retail hydrogen. Without profit margins, this industry will not attract private investors and will remain dependent on funding to advance this technology.

South Coast AQMD Contract # 19191 **June 2020**

Development of Solid Oxide Fuel Cell and Gas Turbine (SOFC-GT) Hybrid Technology

Contractor

University of California, Irvine

Cosponsors

UC Irvine Advanced Power and Energy Program
U.S. Department of Energy (DOE)

Project Officer

Seungbum Ha

Background

Improving air quality in urban areas requires the reduction of criteria pollutant emissions across several sectors. The power sector for both stationary and mobile applications is of particular interest, in part due to the local emissions in disadvantaged and rural communities and its significant contribution to criteria pollutant and greenhouse gas emission compared to other sectors. To meet state energy and environmental goals, interest is growing in fuel cell – gas turbine (FC-GT) hybrid technology as a continuous power generation technology given the unique combination of ultra-high efficiency, ultra-low criteria pollutant emissions, and ability to operate on zero-carbon renewable hydrogen (H_2).

In this project, the optimization of 10 MW class SOFC-GT hybrid power plant technology is addressed for both stationary power generation in the South Coast Air Basin for operating on natural gas (NG), biogas (BG) and renewable H_2 sourced from excess solar and wind. In addition, the optimization of two cases for a 50 MW hybrid power generation plant is addressed, one with carbon capture (CCS) and one without. Finally, both a 3.5 MW SOFC-GT hybrid long-haul locomotive and a tugboat are evaluated as candidates for land-based and marine-based mobile applications respectively, both fueled by liquefied natural gas (LNG) and utilizing the LNG as a low temperature heat sink to increase the overall system efficiency. The Total Plant Cost (TPC) and the Cost of Electricity (COE) are provided for the stationary applications.

Project Objective

The goals of the project were to develop overall system FC/GT simulations and optimize both stationary and mobile applications as a technology candidate to replace existing sources of major NOx and particulate emissions today in the South Coast Air Basin, and to provide techno-economic analyses for the stationary applications to assess feasibility. The project objectives were to:

1) Develop integration models to fully realize the potential of hybrid SOFC-GT systems for disturbed power in the 10 to 50 MW range fueled by NG, BG, and renewable H_2,
2) Develop integration models to fully realize the potential of hybrid SOFC-GT systems in the 3.5 MW range fueled by LNG for mobile applications including long-haul locomotives and tugboats.
3) Conduct a techno-economic analysis for the stationary applications.

Technology Description

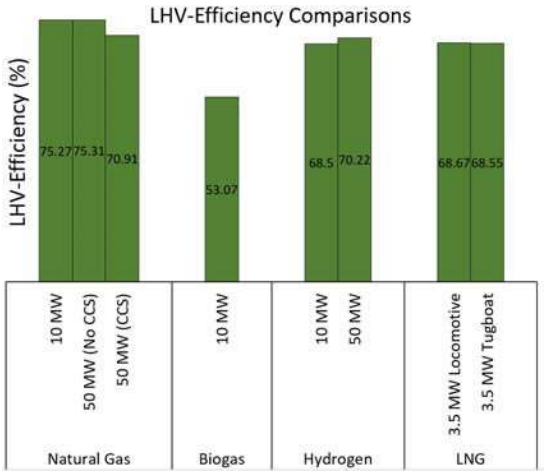
The approach was to first develop 10 MW SOFC-GT hybrid system configurations for a distributed power plant appropriate for wide scale deployment in the South Coast Air Basin that can be operated on NG and BG with the potential to operate on renewable H2. Second, a 50 MW SOFC-GT was selected as a candidate for a large power generation resource in the Basin including service as a Transmission Integrated Grid Energy Resource (TIGER) station operating on NG and renewable H2. Finally, for two major mobile applications, a 3.5 MW LNG-fueled was analyzed for long-haul locomotive and marine-based tugboat applications, the latter of which with a specialized GT air filter to remove the salt content from the ambient air and thereby mitigate compressor blade corrosion.

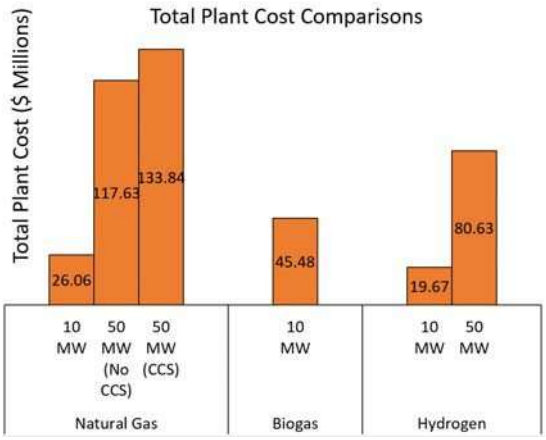
The project leveraged a five-year U.S. Department of Energy (DOE) U.S./China "Clean Energy Research Center (CERC)" water-energy nexus initiative wherein APEP conducted a study with the Chinese Academy of Sciences (CAS) on water efficient 100 MW class SOFC-GT integrated gasification fuel cell (IGFC) systems operating on pulverized coal.

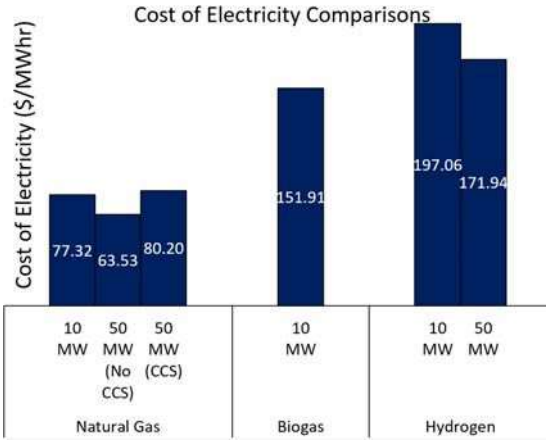
Results

For the 10 MW stationary hybrids, the NG-fueled case resulted in the highest efficiency at 75.27%

(LHV) followed by the H2-fueled case at 68.50%







and the BG-fueled case at 53.07%. At the 50 MW scale, the NG-fueled case without CCS efficiency is 75.31% and with CCS is 70.91% followed by the H2-fueled at 70.22%. The TPC for the 10 MW NG-fueled hybrid is $26,063,604 with a COE at $77.32/MWhr, BG-fueled is $45,483,880 with a COE at $151.91/MWhr, and H2-fueled is $19,671,000 with COE at $197.06/MWhr. When moving to the 50 MW scale, the TPC for the NG-fueled hybrid without CCS and with CCS is $117,628,563 with COE at $63.53/MWhr and $133,835,172 with COE at $80.20/MWhr, respectively. The TPC for the 50 MW H2-fueled hybrid is $80,626,000 with COE at $171.94. For the mobile applications, the 3.5 MW long-haul locomotive has an average LHV-efficiency at 68.67% and, for the tugboat, 68.55%.

Commercialization and Applications

The project proved the feasibility and efficacy of SOFC-GT hybrid technology for both stationary and mobile applications with the following salient conclusions:

- **The results reveal promise for economically viable implementation.** The ultra-high efficiencies and reasonable COE of stationary hybrids portend a promising future market.
- **Stationary applications are more ready for commercialization than mobile**. The stationary application for distributed power generation has a less demanding duty cycle than the application for mobile applications.
- **Operating SOFC-GT hybrids with anode recirculation.** Among anode, cathode, and no recirculation, anode recirculation yields the highest power output/electrical efficiency.
- **The utilization of LNG in mobile applications is beneficial**. LNG provides a higher stored power and energy density, and a higher efficiency given its cryogenic nature as a heat sink.
- **A reduction in renewable H_2 cost is required to enable H_2 as a fuel for distributed generation.** While the TPC for a renewable H_2-fueled SOFC/GT is the lowest at both scales, **t**he current cost of renewable H_2 (due to the price of electricity to power electrolyzers from solar and wind) results in the most expensive COE among the three fuels.

Project Cost

The cost of the one-year project was $900,000, comprised of $200,000 in support from the South Coast AQMD and $700,000 of match funding from the DOE CERC initiative that included cost share from Southern California Edison and Southern California Gas and collaboration with CAS and the Chinese Ministry of Science and Technology.

South Coast AQMD Contract # 17393 **May 2020**

Development of an Ultra-Low Emission Diesel Engine for On-Road Heavy-Duty Vehicles

Contractor

Southwest Research Institute

Cosponsors

South Coast AQMD
U.S. Environmental Protection Agency (EPA)
California Air Resources Board (CARB)
Manufacturers of Emissions Controls (MECA)

Project Officer

Joseph Lopat

Background

The original Stage 1 CARB Low NOx Demonstration Program provided an initial demonstration of the feasibility of technologies for achieving a target tailpipe NOx level of 0.02 g/hp-hr on both a diesel and natural gas engine platform. The diesel demonstration platform was a 2014 Volvo MD13TC EU6 engine, and that program, along with the supplemental Stage 1b durability program funded by South Coast AQMD, demonstrated the feasibility and durability of a system which reached NOx levels near the 0.02 g/hp-hr level. However, due to the low exhaust temperatures of the MD3TC engine created by a turbo-compound for waste heat recovery, there was a significant fuel consumption penalty. CARB later expanded this original demonstration with the Stage 2 program, which focused on Low Load operations typical of urban and vocational applications.

As a follow-up to these earlier programs, CARB and South Coast AQMD launched a second diesel demonstration program, the Stage 3 Low NOx Demonstration Program. The Stage 3 program focused on answering two major questions:

1. Could Low NOx levels be achieved at a smaller fuel consumption penalty?
2. Could a different and more efficient system be designed to target 0.02 NOx levels.

During the Stage 3 program, an additional effort was launched. Designated Stage 3b, it will continue an on-going effort examining the use of additional engine technologies to further improve fuel consumption and green house gas (GHG) emissions while maintaining Low NOx levels. The Low Load Cycle (LLC) target would be developed based off examining the balance of NOx and GHG emissions.

The portion of the program funded by South Coast AQMD and their funding partner, The Port of Los Angeles, involved the development of the modified engine calibrations, the screening and selection of aftertreatment hardware options, and the final development of the down-selected technology package for the engine-aftertreatment system.

Status

The South Coast AQMD Stage 3 development effort was completed January 2020. Futher stages involving improvements in technologies to lower NOx, including testing renewable diesel, will be ongoing. CARB Stage 3b is currently in progress and is expected to be completed in July 2021.The final report for Stage 3b will be submitted at that time.

Results

The first task in the South Coast AQMD program was the development of a modified engine calibration that would enable an advanced aftertreatment system to reach Low NO_X levels. This modified calibration was later supplemented by the Stage 3b engine hardware work, which resulted in a modified engine calibration that incorporated cylinder deactivation (CDA) as a level to improve fuel efficiency and maintain aftertreatment system temperatures. The final engine calibration shows the impact of the modifications on the early part of the cold-start Federal Test Procedure (FTP) cycle. The engine modifications resulted in a significant increase in

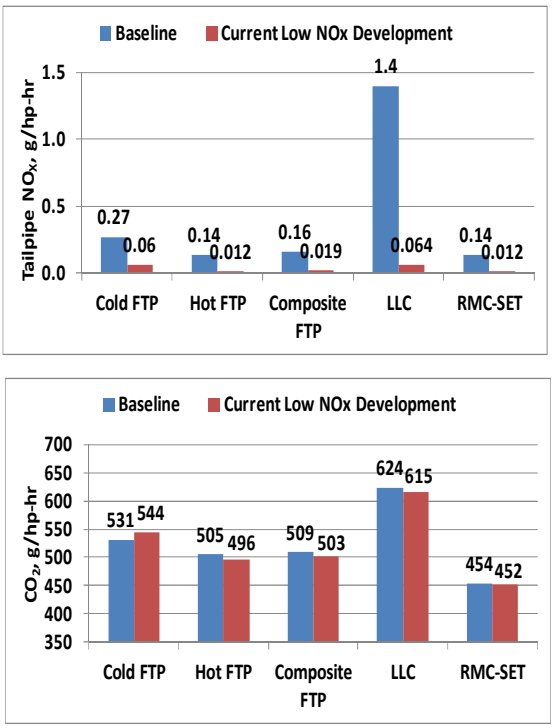


Figure 1: Performance Levels Demonstrated at the End of South Coast AQMD Funded Development on Hydrothermally Aged FUL parts (435,000 miles equivalent)

exhaust temperatures while also controlling engine-out NO_X during the aftertreatment warm-up period. Leveraging CDA allowed this to be done with only a small impact on cold-start GHG, while hot-start GHG levels showed a benefit compared to baseline. Following an extensive evaluation of candidate aftertreatment technologies and configurations, a final configuration was chosen, which is shown in Figure . This configuration employed both a close-couple light-off Selective Catalytic Redution (LO-SCR) and a downstream system and featured dual Diesel Exhaust Fluid (DEF) dosers, including a heated upstream dosing unit. An advanced controls system was implemented on the engine including state-of-the-art model-based dosing controls, and an integrated state-based strategy controller with multiple thermal management modes. The final system was calibrated to minimize NO_X emissions, while at the same time maximizing efficiency and controlling GHG emissions. The final calibration was demonstrated on a system that was hydrothermally aged to represent a full useful life of 435,000 miles. The resulting performance levels are shown in Figure . The system was able to reach tailpipe NO_X levels below 0.02 g/hp-hr on the FTP and Ramped Modal Cycle Supplemental Emissions Test (RMC-SET), and at 0.06 g/hp-hr for the LLC. At the same CO_2 levels of the FTP and LLC were better than the baseline engine by 1 to 1.5%, while the Low NO_X configuration was fuel consumption neutral on the RMC-SET compared to the baseline.

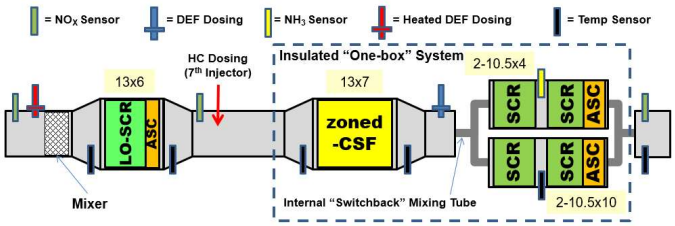


Figure 2: Final Stage 3 Aftertreatment Configuration Down-selected from Evaluation

Project Costs

The funding for Stage 3 is shown in Table 1.

CARB	$750,000
South Coast AQMD	$287,500
Port of Los Angeles	$287,500
Total stage 3	$1,325,000

Table 1: Funding for Stage 3

An additional $1,375,000 was provided in Stage 3b by EPA, MECA, and the SwRI-run CHEDE-VII industry consortium. In total, considering both Stage 3 and the Stage 3b supplement, the overall program has been funded to nearly $2,700,000.

Commercialization and Applications

The Stage 3 program is a critical data point supporting the development of new Low NO_X regulations for both CARB and EPA. Data from this program will support both the ARB Omnibus Low NO_X Rule and the EPA Cleaner Trucks Initiative NPRM.

The Low NOX configuration developed in this program has been tested over current regulatory cycles, the new LowLoad Cycle, and field cycles. The system has shown the potential for NO_X emission control under a wide variety of application cycles, while maintaining GHG emissions, and in some cases showing improvements.

Several technology elements of the engine and aftertreatment system are likely to be incorporated in future on-highway engines to meet Low NO_X standards.

South Coast AQMD Contract #18211 **June 2020**

DEVELOP THERMAL MANAGEMENT STRATEGY USING CYLINDER DEACTIVATION FOR HEAVY-DUTY DIESEL ENGINES

Contractor

West Virginia University Innovation Corporation (WVUIC)

Co-Sponsors

Environmental Canada, US EPA, Jacobs Vehicle Systems (JVS), Cummins Inc.

Project Officer

Joseph Lopat

Background

Cylinder deactivation (CDA) was shown to reduce pumping losses in spark ignited engines. The concept of CDA has recently gained interest in the heavy-duty diesel (HDD) engine segment as a pathway to a fuel-efficient thermal management strategy and, in some cases, for improvements to brake thermal efficiency (BTE). Certain vocational duty cycles that are characterized by frequent stop-and-go (urban delivery, refuse truck, port drayage) and extended idle and creep mode operations (port drayage vehicles), are plagued by higher NOx emissions due to increased cooling of the exhaust aftertreatment system. Operations are typically below the 30% power curve of the engine and account for a major fraction of the engine operation in regions characterized by high vehicle traffic density.

Project Objective

The thermal management strategies currently employed are associated with a fuel penalty. It is imperative, therefore, to adopt a strategy that results in a minimal to no fuel penalty. Recent studies have shown that a CDA approach in a heavy-duty 6-cylinder engine can result in close to a 63ºC increase in post turbine exhaust gas temperature with no change in brake-specific fuel consumption (BSFC), while a 13ºC increase in post turbine exhaust gas temperature can be realized with a 25% reduction in BSFC.

Technology Description

West Virginia University, Center for Alternative Fuels, Engine and Emissions (WVU-CAFEE), JVS and Cummins Inc. propose this collaborative effort that will integrate cost-effective cylinder deactivation hardware, developed by JVS, in a 15 L Cummins ISX HDD engine platform with suitable engine controls and calibration for improving BTE and selective catalytic reduction (SCR) thermal management at engine loads below 30%. The proposed JVS cylinder deactivation technology has been developed as a cost-effective integration into current technology HDD engines. JVS has demonstrated the ability to deactivate independently all six cylinders at any given point of time. However, a complete system integration, which addresses noise vibration and harshness (NVH) issues, seamless transition of CDA to baseline and calibration of active cylinders has not been realized.

Status

In the final phase of the project, two thermal management strategies were tested: CDA while motoring (stay-hot) and early exhaust valve opening (EEVO) (get-hot). The stay hot strategy was tested on steady state motoring points as well as on a transient California Air Resources Board (CARB) low-load cycle (LLC). The EEVO was tested on idle conditions as a quick warmup strategy.

Results

Figure 1 shows motoring operation at 1,200 rpm for operation with one cylinder, two cylinders and three cylinders disabled. The results show that compared to the baseline cooldown profile of the exhaust gas at inlet of SCR, the time taken for the SCR inlet temperature to reach below SCR activation increases with the increasing number of

cylinders disabled. The increase in temperature is primarily due to lowering the air flow across the aftertreatment system during no-fueling and motoring operation. The results show that by disabling three cylinders, the SCR inlet temperature takes over a minute to reach 150°C. This is a viable option to reduce the increased NOx options after a down-hill operation.

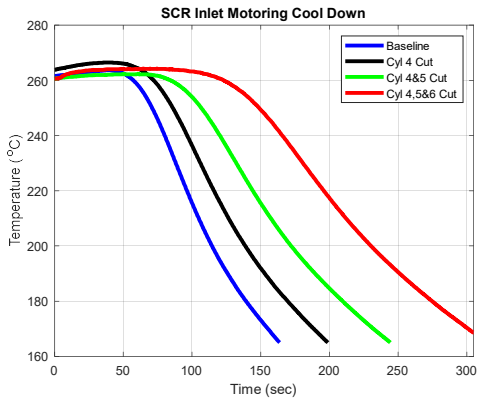


Figure 1: 1,200 rpm SCR Inlet Temperature Profile for Various Cylinder Cut-Off

Figure 2 shows the results of the temperature profiles for CDA operation during the CARB LLC cycle. Six-cylinder CDA while motoring during the LLC cycle can keep the SCR inlet temperature above the 150°C threshold.

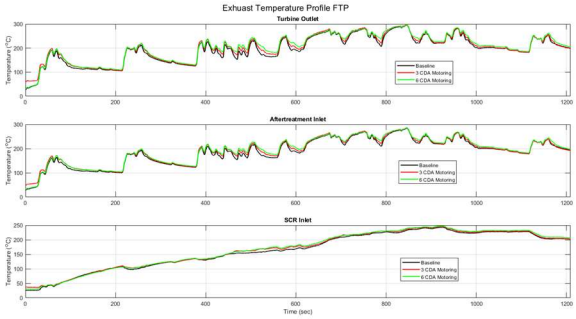


Figure 2: CDA Motoring Operation over the CARB LLC Cycle

It was decided to use EEVO for all load points below 1000 ft-lbs and to use an increased idle speed to increase the fueling and mass flow rate of air. The results show that the get-hot strategy can reach the 150°C threshold two minutes faster than the baseline warm-up strategy and sustained conducive SCR temperatures are observed during the LLC cycle.

During the warm-start the get-hot strategy is found to be far-more effective with NOx emissions temperatures at the inlet of SCR reaching over 200°C. The get-hot strategy can potentially lower cold-start NOx emissions. It may also be effective during frequent start-stop operations. The downside of the EEVO get-hot strategy is the fuel penalty that is incurred during the EEVO operation. However, with smart engine calibration this fuel penalty can be lowered from the current 10-15% compared to baseline.

Benefits

Near-zero NOx from HD diesel engines can reduce NOx nationally from the 11 million commercial diesel trucks on road. Reduction of NOx by 90% can significantly improve air quality nationally.

Project Cost

Funding for the project is listed in the following table.

Environmental Canada	$100,000
South Coast AQMD	$250,000
US EPA	$250,000
Cummins and JVS (in kind)	$100,000
Total	$700,000

Commercialization and Applications

WVU is continuing to work on the development of smart calibrations to optimize fuel consumption. Optimization of the CDA operation can potentially yield fuel savings that can offset the increased fuel consumption from EEVO operation. WVU is also partnering with Tula Technologies to further advance the CDA control for optimal firing patterns. The continuous work on this project is expected to have a good chance for commercialization compared to the success of other CDA platforms used by General Motors and others. CDA supports the need for low NOx diesel engines soon to be required by CARB and the US EPA.

South Coast AQMD Contract #13433 **March 2020**

Zero Emission Cargo Transport (ZECT-I): Develop and Demonstrate Two Class 8 Zero-Emission Electric Trucks

Contractor

US Hybrid Corporation

Cosponsors

US Hybrid Corporation
U.S. Department of Energy (US DOE)
South Coast AQMD
University of California, Riverside

Project Officer

Phil Barroca

Background

On-road heavy-duty diesel trucks are a significant source of diesel particulate matter and NOx emissions with adverse health effects. The impact on public health is more pronounced in the communities adjacent to goods movement corridors near the Ports of Los Angeles (POLA) and Long Beach (POLB) and major freeways in Southern California. Recognizing the significant impact diesel trucks have on air quality and public health, the South Coast AQMD has been working with regional stakeholders, including the POLA and POLB, to promote and support the development and deployment of advanced zero emission cargo transport technologies in the South Coast Air Basin. This project was one of four zero emission drayage truck technologies South Coast AQMD that received a grant under the Department of Energy's (DOE's) Zero Emission Cargo Transport (ZECT) Demonstration program.

Project Objective

The objective of this project was to develop and build two zero emission Class 8 battery electric drayage trucks (BETs) for demonstration in real world drayage service to promote and accelerate the use of electric transportation technologies in cargo transport operations. US Hybrid's BETs were referred to as eTrucks™.

Upon completion, the eTrucks™ were planned to be demonstrated in real world drayage service for two years in partnership with a South Coast AQMD-approved fleet in Basin.

Technology Description

The demonstration eTrucks™ were built on a Navistar ProStar Model 8600 chassis with 80,000-lbs Gross Combined Weight Rating (GCWR). The eTrucks™ are powered by a 320-kW electric drive system which has been developed mainly for on-road eTrucks™ applications. The electric motor is an induction type design, free of high cost rare-earth permanent magnet materials making it commercially cost effective. The motor is powered by a proven traction motor inverter rated at 420-kVA at 600V-DC. An energy management system was employed to ensure efficiency and reliability of the lithium-ion cells. Truck one (eTruck™ 1) was fabricated and operated using EnerDel lithium-iron-phosphate (LFP) battery packs with 180 kWh of total capacity. This initial battery platform demonstrated inadequate range, power, and life cycle. US Hybrid's eTruck™ 2 used 280 kWh of A123 lithium nickel-manganese-cobalt (NMC) battery chemistry which provided sufficient power and energy density and durability (cycle life). eTruck™ 2 provided an approximate 100-mile range under normal operating conditions (80% depth-of-discharge). To support the eTruck™ acceleration requirements, the energy storage system was set up to meet the required power density at low state of charge and to accept the regenerated power at a higher state of charge. In addition, a proprietary eTruck™ control system optimizes eTruck™ efficiency, maximizing battery life, and protecting key components such as batteries and power electronics from excessive temperatures, voltage spikes, and current surges.

Figure 1: eTruck™ 2 at South Coast AQMD January 2020

Status

The ZECT I project was completed March 31, 2020. On March 24, 2015, eTruck™ 1 was successfully demonstrated at TTSI's facility with 80,000-lbs. GCWR. eTruck™ 2 was delivered to TTSI in June 2019 for demonstration.

Figure 2: eTruck™ 1 with 80,000 lbs GCWR Trailer

Results

Two battery electric trucks were designed, developed, and deployed for demonstration at the POLA and the POLB by US Hybrid. TTSI was the primary demonstrating fleet at the ports. The drivers really liked the smooth truck operation especially at low speed as they engage with the trailers and maneuver in the lot with virtually no operating noise. Drivers and operators still have range anxiety even when we increased the battery capacity by 55% for an effective range of 100 miles in full load real world operation.

The eTrucks™ powertrain system performance was well within the design parameters and there were no issues during the demonstration for both trucks. The auxiliary systems were updated from the first truck to the second to be 30% more efficient. The biggest lesson learned in this project was how difficult it was to deal with battery suppliers, both in technical performance (power density, energy density, life degradation), and charge profiling to extend battery life. US Hybrid was able to validate its cost model for small (100), medium (200), and large volume (500) units per year. It requires more production and supply chain experience to validate the cost models for thousands of annual units. We were able to develop a price matrix/indicator of $/mile-range for battery electric trucks for drayage applications. Furthermore, US Hybrid was able to develop a Utilization Factor Indicator for the eTrucks™ that is a composite of loss of payload due to added weight of large battery box and the loss of utilization due to charge time based on double shift (16 hours) operation.

Overall, the electric traction system is capable of meeting drayage performance demands. The main issue with electric-powered trucks is life cycle cost, and most importantly the capital cost associated with the truck purchase, including the battery replacement (estimated in 4 years) in the 8-year typical life operation. US Hybrid calculated an operation cost ($/mile) for the eTruck™ based on Southern California Edison rates at its facility in Torrance, CA of $0.15/kWh (net) and $0.39/kWh (gross), taxes and demand charges, and a diesel truck getting 6 mile/gal, and fuel cost at $2.80/gal or $0.46/mile, equating diesel fuel to electric energy at $0.15/kWh and assuming 3 kWh/mile AC power. When compared to natural gas at 4 miles/GGE and $1.60/GGE, the break-even electricity rate should be $ 0.13/kWh. This is in contradiction with most reported sales literature. Special electrical rates of less than $0.15/kWh is needed to have a break-even operation cost if electric trucks are to compete with diesel and natural gas fuels. The operation cost data does not include any cost for infrastructure or utilization of on-board charges (eTruck™ cost) or DC off-board charger, facility cost, etc.

Project Costs

Total project cost was $2,116,323, with $943,810 from South Coast AQMD/US DOE and $1,172,513 from US Hybrid. Original cost share was projected at $1,043,811.

Commercialization and Applications

Based on the development and operation of the two eTrucks™, the following is the best estimate of commercial viability economics of incremental cost $/mile-range and productivity of the truck. Not accounting for container weight capacity reduction, heavy battery, and time allocated to charge a large battery pack, the eTruck™ energy efficiency is about $2.8kWh/mile. The battery cost used for the calculations is $498/kWh including BMS, packaging for heavy duty shock and vibration, and IP67 rating and protection.

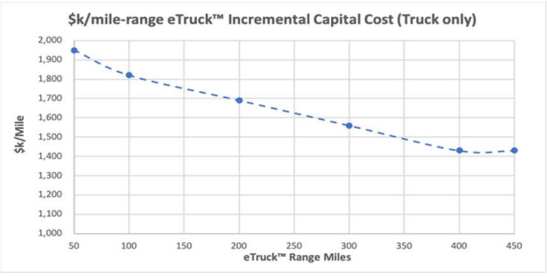


Figure 3:Incremental Capital Cost (truck only) ($/mile range)

South Coast AQMD Contract #16046 **March 2020**

Zero Emission Cargo Transport (ZECT-I) Develop and Demonstrate Two Class 8 CNG Plug-In Hybrid Electric Drayage Trucks

Contractor

Transportation Power, Inc. (TransPower)

Cosponsors

California Energy Commission (CEC)
U.S. Department of Energy (DOE)

Project Officer

Phil Barroca

Background

On-road heavy-duty diesel trucks are a significant source of diesel particulate matter and NOx emissions that can create serious health effects. The impact on public health in Southern California is more pronounced in communities along the goods movement corridors near the Ports of Los Angeles and Long Beach, and next to major freeways. Recognizing the significant impact diesel trucks have on air quality and public health, the South Coast AQMD has been working with other regional stakeholders, including the Ports of Los Angeles and Long Beach, to promote and support the development and deployment of advanced zero emission cargo transport technologies in the South Coast Air Basin. Deployment of zero emission trucks in this region may also be a future requirement for conforming with rules, regulations, and mandates of the South Coast AQMD, California Air Resources Board (CARB), Environmental Protection Agency (EPA), and DOE, while also helping to foster economic development in the region.

Project Objective

The overarching goal of this ZECT project was to develop a hybrid-electric drive system using a natural gas engine as a range extender and to demonstrate two Class 8 drayage trucks using this system in service with Total Transportation Services, Inc. (TTSI) at the Ports of Los Angeles and Long Beach. This project was one of four zero emission drayage truck technologies funded by a grant from the DOE under the ZECT Demonstration Program. The vehicles were intended to be demonstrated in near-dock drayage service for two years in partnership with Transportation Services, Inc. or other South Coast AQMD approved fleets in the basin. A specific project objective was to determine if a very small compressed natural gas (CNG) engine could provide sufficient power to work as a range-extender for locally-driven trucks, while also being capable of operating intermittently in a zero emissions mode, solely on battery power with the engine turned off.

Technology Description

The TransPower ElecTruck™ drive system uses a unique combination of two 150 kW permanent magnet motors that were originally developed for the Fisker Karma hybrid passenger car. The demonstration vehicles (one of which is pictured above) were equipped with inverter-charger units (ICU) that combine the functions of the vehicle inverter and battery charger. This innovation minimizes external charging infrastructure and charges each truck in less than 4 hours, providing operational flexibility and reducing capital costs. An automated manual transmission uses proprietary software to control a transmission shift mechanism, enabling operation in multiple gears to maximize vehicle efficiency. High-energy lithium ion battery modules were installed on both trucks providing 30-40 miles of all-electric (battery-only) range under normal operating conditions. Lithium-iron-phosphate cells were installed on the first

Figure 1: TransPower CNG Series Hybrid Truck No. 2

truck and nickel-manganese-cobalt on the second truck. A proprietary vehicle control system controls the CNG auxiliary power unit (APU), optimizes vehicle efficiency, maximizes battery life, and protects key components such as batteries and power electronics from excessive temperatures, voltage spikes, or current surges.

Status

The ZECT project was successful in demonstrating the proof-of-concept of a CNG hybrid configuration to meet the basic load-carrying requirements of an 80,000-pound Class 8 truck. The innovative dual motor configuration selected for the trucks provided adequate performance and high reliability in a package that cost less and was more compact than competing motive drive options. The ICUs performed up to expectations and enabled the trucks to be safely recharged with minimal external infrastructure. Battery energy storage capacity exceeded contract specifications. The major unanticipated problem encountered during the project was that the Ford 3.7-liter engine selected for the APU, when limited to Stationary Trim mode, was incapable of supplying more than 60 kilowatts (kW) of power, making it impossible to carry full loads at freeway speeds for more than about 50-60 miles. Limitations of the chosen engine control strategy also resulted in higher APU emissions than desired. In addition, the experimental battery product selected for the first prototype truck had severe quality problems that limited use of this truck and forced the use of a different battery in the second truck, which delayed its deployment. Despite these challenges, operators of these trucks commented that they were the best electrically-driven trucks they had driven at the time. On-going advances in engine control and battery technology are expected to address the range limitation and emissions issues, making hybrid-electric trucks of this type a practical alternative.

Results

The two prototype CNG hybrid trucks accumulated approximately 5,000 miles of test operation, including several long-distance trips of 100 miles or more while unloaded. They were put through two years of intermittent use in commercial drayage operations carrying full loads, along with a series of dynamometer tests at the University of California, Riverside (UCR). Results of the UCR dynamometer testing, shown in the bar graph below, indicate NOx emissions of more than 7 g/bhp-hr. across the four duty cycles tested. The higher-than-anticipated emissions were the result of TransPower's inability to obtain a certified automotive engine configuration that was expected to be provided by Ford. This forced TransPower to use a CNG engine designed for stationary power generation, whose control could not be optimized to minimize automotive emissions within project budgetary constraints.

Benefits

Cycle	Ave Speed	Duration	Distance	Net Total Energy	Net Generator Energy	Net Battery Energy	Total Energy usage	Generator energy usage	Battery Energy usage	SOC usage
n/a	mi/hr	sec	mi/cycle	kWhr	kWhr	kWhr	kWhr/mi	kWhr/mi	kWhr/mi	%
SG1 Hill	40.79	448	5.07	22.95	4.37	18.58	4.53	0.86	3.66	11
UDDS	18.39	1061	5.42	15.02	12.34	2.67	2.77	2.28	0.49	2
UDDS	18.48	1061	5.45	14.97	12.83	2.14	2.75	2.36	0.39	1
DTP 3	23.98	4229	26.65	56.52	50.20	6.32	2.12	1.88	0.24	5
UDDS (No APU)	18.31	1061	5.40	17.15	0.00	17.15	3.18	0.00	3.18	10
SG1 (No APU)	33.15	427	3.93	19.04	0.00	19.04	4.85	0.00	4.85	12
UDDS	18.46	1061	5.44	15.49	11.87	3.62	2.85	2.18	0.67	2
UDDS	18.59	1061	5.48	14.65	12.09	2.56	2.67	2.21	0.47	2

Figure 2: Summary Across All Cycles for Chassis Dyno Testing for Truck No. 2

By demonstrating the proof-of-concept of using a CNG engine to augment a battery pack in a Class 8 truck application, this project established a foundation for future work, which could yield emissions and energy efficiency benefits by utilizing larger CNG engines with more typical automotive controls. This technology could reduce air pollutants while helping to address global warming if utilized for goods movement, which is seen as one of the leading sources of criteria pollutants and carbon emissions.

Project Costs

The total cost of the TransPower hybrid project was $2.68 million, exceeding the projected $2.1 million. South Coast AQMD funded over $1.15 million. TransPower's cost share was $1,529,065, exceeding the original $900,000.

Commercialization and Applications

Evidence is mounting that electrification of Class 8 trucks has great commercial potential, and the size of the locally-driven U.S. electric Class 8 truck market is in the tens of thousands of trucks per year. Improvement in CNG hybrid technology could enable application to long-haul trucks, which could expand the addressable market to hundreds of thousands of trucks per year.

South Coast AQMD Contract #17029 **December 2020**

Demonstration and Evaluation of Plug-in Smart Charging at Multiple Electric Grid Scales

Contractor

University of California, Irvine (UCI)

Cosponsors

UCI Advanced Power and Energy Program (APEP)
US Department of Energy
Hyundai
Southern California Edison

Project Officer

Seungbum Ha

Background

Improving air quality in urban areas requires the reduction of criteria pollutant emissions across several sectors. The transportation sector is of particular interest due to the local emissions in disadvantaged communities and the regional contribution to criteria pollutants and greenhouse gas emissions. To meet State energy and environmental goals, the deployment of alternative vehicles including plug-in electric vehicles (PEV) and fuel cell electric vehicles has increased in recent years and it is expected to increase further. Since these vehicles are connected to the electric grid, their interaction with the electricity sector and grid is of utmost importance. For PEVs to contribute to emissions reductions, plug-in vehicles must interface with the electric grid such that 1) their usage of renewable energy is maximized and 2) charging behavior does not cause the grid to violate its ability to adhere to reliability criteria and balance the electric load demand at all grid scales. To coordinate and control charging of PEVs, smart charging strategies should be implemented.

In this project, a previously developed smart charging strategy was implemented, deployed, and demonstrated on the UCI Microgrid Solar CarShade nanogrid using a fleet of 10 battery PEVs. This project increases understanding on how PEVs should be managed on the electric grid distribution system so that their deployment can become a valuable asset for electric grid operation and the microgrid, renewable resource utilization, and emission reduction.

Figure 1: KIA Soul EVs

Project Objective

The purpose of the project was to implement a smart charging algorithm previously developed by the UCI Advanced Power and Energy Program (APEP) on a fleet of PEVs and demonstrate the smart charging strategy on a nanogrid located on the UCI Microgrid. The project goals were to:

1) Further develop an existing smart charging algorithm so that it can be tuned by balancing area operators, investor-owned utilities, and third parties (e.g., microgrid operators) for their specific needs and implementation in their specific domains; and

2) Successfully demonstrate the effectiveness of the developed algorithm on the UCI Microgrid Solar CarShade nanogrid with specially equipped PEVs.

Approach

A smart charging algorithm previously developed was modified to enable implementation on a small scale at the distribution level on a nanogrid. The Solar CarShade nanogrid includes a building, 48 kW of photovoltaic (PV) panels, a 100kW/100 kWh battery and 20 level 2 electric vehicle (EV) chargers. The smart charging strategy is a decentralized valley-filling optimization where the charging profile of each vehicle is optimized individually and independent of the rest of the fleet and based on a cost profile, price signal, or load profile (cost load). The cost profile is then updated with the vehicle's

charging profile, and the updated cost profile is then used for upcoming vehicles. Several scenarios were developed and first simulated using different cost load profiles based on data collected from the UCI Microgrid.

A strategy was developed to implement the smart charging algorithm on the CarShade nanogrid using 10 KIA Soul EVs. This strategy included several components including a driver portal for the participating drivers to enter their travel plan, and communication with the vehicles to poll their status and enable sending charging ON/OFF commands to the vehicles. This strategy was then deployed and demonstrated in the nanogrid

Results

The smart charging algorihtm was deployed on the nanogrid and demonstrated. More than 80 days of testing and demonstration were conducted with different cost profiles and various scenarios. The smart charging results were recorded, and data was collected and recorded including vehicle status, commands sent, nanogrid load, PV generation, as well as data from the chargers.

Overall, the demonstration was successful with the qualification that communication was periodically interrupted due to network connectivity issues.

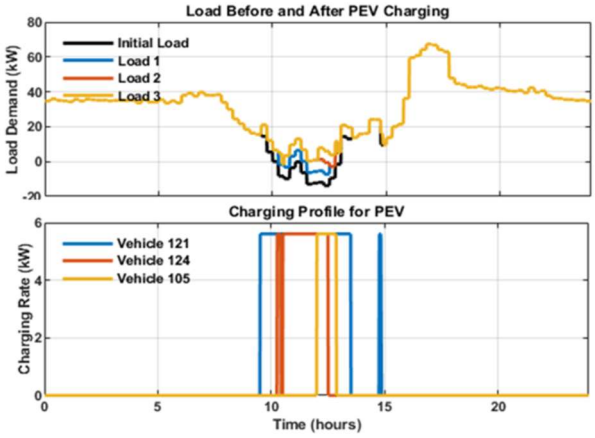


Figure 2: Load Demand and Charging Profile

Project Costs

The total cost of the project was $750,000. South Coast AQMD provided $250,000 of the total cost. Match funding of $500,000 was provided by UCI, the U.S. Department of Energy, Southern California Edison, and Hyundai.

Commercialization and Applications

The demonstration proved feasibility and efficacy of the smart charging algorithm deployed on a nanogrid. Below are some observations and lessons learned from the project:

- **Demonstration results reveal promise for large-scale implementation in the future.** All components and strategies developed in the project can be scaled up for a larger fleet.
- **The strategy can be implemented and deployed on parking structures**. The strategy can be deployed on parking structures at workplaces as well as retail centers with minimum infrastructure upgrade.
- **Standards should be developed for communications with the vehicles and charging infrastructure.** To reduce upfront cost and effort for fleets with EVs of different make and model, standards should be developed.
- **Required communication rate with the fleets might be higher than expected originally.** To identify issues and to ensure customer satisfaction, communication with the vehicles is required.
- **Negative impacts of high rate of communication with the vehicles should be addressed.** The auxiliary battery is depleted with a high rate of communication. The issue can be addressed in the design of the vehicles.
- **Strategies must be developed to incentivize PEV drivers to participate in smart charging programs**
- **Load forecasting helps improve the outcome of smart charging for larger fleets.** While impact of forecasting is small for smaller fleets, it can significantly improve the smart charging results for larger fleets.

South Coast AQMD Contract # 18122 **January 2020**

Southern California Trucking Demonstration of Near-Zero ISX12N Beta Engines

Contractors

Clean Energy
Cummins Westport Inc.

Co-Sponsors

South Coast AQMD
California Energy Commission (CEC)

Project Officer

Phil Barroca

Background

The Ports of Los Angeles and Long Beach rank drayage trucks as the second largest source of NOx and the largest source of greenhouse gas (GHG) emissions from port-related activities.

Replacing the almost 8,000 oldest diesel port trucks with trucks powered by the Cummins Westport (CWI) ISX12N ultra low-NOx engine and fueled with renewable natural gas (RNG) is one of the best opportunities for air quality improvement in Southern California.

One of the key barriers to adoption of the ISX12N engine among drayage fleets is the lack of experience with the engine operating in the port drayage application. Skepticism about the technology is amplified by the unsatisfactory experience of some truckers with the first-generation natural gas technologies that were deployed in port drayage over 10 years ago in response to the first Clean Truck Program.

Project Objective

Clean Energy and CWI initiated this project to demonstrate 20 trucks repowered with pre-commercial ("beta") versions of the ISX12N engine for one-year periods. Beta engines were used to allow the project to be performed in parallel with CWI efforts to finalize ISX12N engine development and secure California Air Resources Board (CARB) certification to the lowest optional low NOx standard of 0.02g-NOx/bhp-hr. This parallel approach was intended to shorten the traditional time between the initial commercial launch and the market prove-out of the new engine.

Technology Description

CWI developed the ISX12N engine with funding support from South Coast AQMD, CEC, and others to be certified to the CARB optional low NOx standard of 0.02g-NOx/bhp-hr. This certification is 90% cleaner than the current new truck engine manufacturing standard, and over 98% cleaner than the emissions standard of almost 8,000 of the oldest port trucks. When fueled with RNG, climate pollutants can be reduced by 50% to over 500% compared to diesel. These percentages are dependant on the carbon intensity of the RNG source under the CARB Low Carbon Fuel Standard (LCFS) program.

Figure 1:Cummins Westport ISX12N Ultralow-NOx Engine

The ISX12N also eliminates 100% of the toxic diesel particulate matter and diesel petroleum use of a diesel truck. The ISX12N is also far quieter than diesel engines, reducing noise pollution.

Status

Seven trucking companies from port drayage and regional trucking participated in the project by running the demo trucks in their actual operations. Participating companies were TTSI, 4Gen, Pacific 9 Transportation (Pac 9), NFI, Green Fleet Systems, CR&R, and Orange Avenue Express. Demonstrations started in September of 2017 and ended on June 30, 2019. Each of the seven participating fleets ran their trucks for a 12-month period commencing at staggered starting dates. The trucks traveled a total of 567,603 miles

during the demonstration and as of mid-August had run over 750,000 miles.

Results

The engine performed exceptionally well for this project with an engine availability of 98% during the demonstration. Trucks traveled to all the routine destinations and routes in southern California for port trucks and regional trucks including near the port, along the 710 corridor, and to the Inland Empire, San Diego, and Central Valley. The ISX12N has proven to reliably perform port drayage and regional hauling services throughout southern California and even beyond.

Drivers and fleet operators found the ISX12N to be suitable for the job. Six of the operators have either acquired, or are planning to acquire, trucks with the commercial ISX12N. These near-term orders involve approximately 140 trucks with over 70 delivered in 2019.

Benefits

The 20 demonstration trucks displaced 129,674 gallons of diesel fuel and reduced 4.02 tons of NOx over the course of the project. Because the trucks were powered by 100% RNG, GHG emissions were reduced by 887 tons.

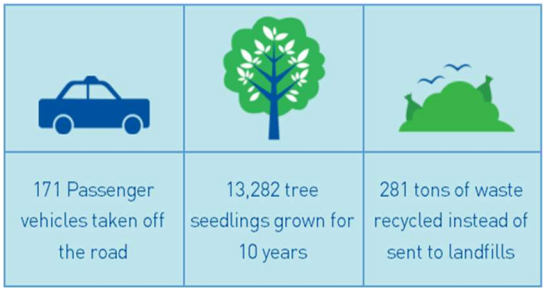


Figure 2:Greenhouse Gas Reduction Equivalencies

Figure 3:Pac 9 Class 8 with ISX12N Refueling with CNG

Project Costs

The project budget and the actual project costs are shown in the table below. Funding provided by CEC of $2,845,000 and South Coast AQMD of $650,000 matched the project budget. Cost share costs incurred by the project contractors and participating fleets totaled $2,717,007, which was $217,007 more than the project budget of $2,500,000. The higher cost incurred by participants was due to higher used truck acquisition and repair costs (unrelated to the beta engine and associated CNG and LNG fuel systems) and high project management costs due to the overall duration of the project.

Project Budget		Actual Costs
South Coast AQMD	$650,000	$650,000
CEC	$2,845,000	$2,845,000
Cost Share	$2,500,000	$2,717,007
Total	$5,995,000	$6,212,007

Commercialization and Applications

This project helped demonstrate the capability of the ISX12N engine in routine port drayage and regional trucking applications. The ISX12N is CARB certified and commercially available and in 2020 received a Technology Readiness Level (TRL) 9 in an Addendum to the Port's Clean Air Action Plan.

South Coast AQMD Contract #12667 **March 2020**

Upgrade CNG Fueling Station

Contractor
West Covina Unified School District (WCUSD)

Cosponsor
South Coast AQMD

Project Officer
Phil Barroca

Background
In 2012 West Covina Unified School District initiated participation in the South Coast AQMD's Lower-Emission School Bus Replacement Program with a desire to replace its fleet of older diesel-powered school buses with alternative fueled vehicles. To date, the district has replaced 9 Type D diesel-powered school buses with comparable compressed natural gas (CNG)-powered school buses. Currently, the district's school bus fleet is composed of 19 buses as follows:

Type of School Bus	No.
CNG	9
Gasoline	3
Diesel	7

Of the 7 diesel-powered school buses, 6 were manufactured prior to 2004 and are scheduled to be replaced with CNG-powered school buses as South Coast AQMD grant funding becomes available.

The first CNG-powered school buses acquired by the district were fueled by outdated temporary refueling equipment that worked poorly. As additional CNG-powered school buses were acquired, fiduciary and safety responsibility dictated that the district should install a new and permanent time-fill CNG fueling facility.

Project Objective
The objective of this project was to construct a slow-fill CNG refueling facility for the district to refuel its natural gas school buses on-site, both to meet present and projected future needs. The station would be located at 1717 W. Merced Avenue in West Covina. This objective was completed in October 2018 with the installation of fueling posts and a slow-fill fueling station. The district hired and worked with Jaycox Construction who installed both the fueling posts and station.

Technology Description
The new station is comprised of two 7.2 standard cubic feet per minute (scfm) BRC FuelMaker model FMQ-8-36 compressors, gas conditioning equipment, controls and all ancillary equipment, two 33.5 cubic feet CNG storage spheres, and 9 time-fill fueling posts. The dual compressor unit dispenses CNG at 6.7 gasoline gallon equivalent (GGE)/hr. WCUSD buses average 30 miles of daily travel and consume about 10 GGE at an average fuel efficiency of 3 mpGGE. Concurrent refueling of all nine buses requires 13-14 hours or 1.5 hours per bus. Field trips of 150 miles requires 8 hours of refueling using both compressors. The dual compressor design is meeting the district's demands.

Figure 1: BRC FuelMaker FMQ-8-36

Status
In 2012, the district was awarded a grant by South Coast AQMD to construct a CNG refueling station. The contract for this project was extended from December 2017 through March 2020 following a no cost time extension request from the district in 2017. While designing the new fueling station the district encountered an issue with the available electrical power required to power the

compressors. This issue was resolved in partnership with Southern California Edison and required an upgrade to the main electrical service to provide the necessary electrical power for the new CNG compressors and station. The district issued a request for quotes on the project in 2017 and awarded the job to Jaycox Construction which commenced construction in 2018.

Figure 2: Type D CNG Bus Refueling

Results

The station displaces more than 12,000 gallons of diesel fuel annually. The station was first commissioned in late summer of 2018. The chart below provides a monthly throughput amount in GGEs per month and seasonal fueling patterns for the first full calendar year of operation in 2019. From January to December 2019, a total of 15,784 CCFs (hundred cubic foot) were consumed. Using

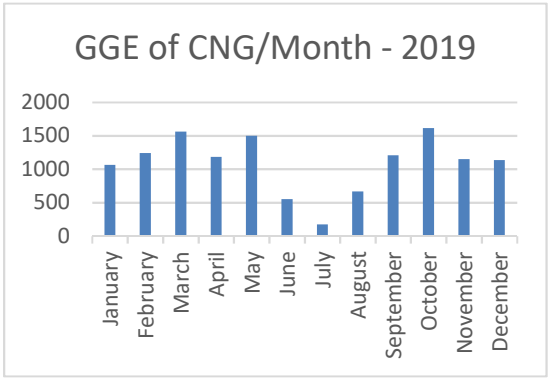


Figure 3: Throughput in GGE/month-2019

a conversion formula of 1.212 CCFs per gallon of gasoline, and 1.115 gallons of gasoline per gallon of diesel, the CNG station saved 13,023 gallons of gasoline fuel or 11,679 of diesel. In terms of NO_x and particulate matter (PM) emissions, 1.23 tons of nitrogen oxides were taken out of the air and particulate matter has been reduced as well.

Benefits

In addition to the air quality benefits achieved, e.g., reduced NO_x and PM emissions, by switching from diesel to natural gas, construction of the fueling facility has allowed the district's transportation services to significantly cut operational costs. Fuel and labor cost savings to the district equal $12,000 annually and is anticipated to exceed twice that once the district replaces the current fleet of pre-2004 diesel-powered school buses with CNG-powered school buses.

Project Costs

Projected bid costs were anticipated at approximately $100,000. Actual project costs were $84,915 as follows:

Actual Project Cost	
100% Payment and Performance Bond	$2,500
Installation of slow-fill CNG refueling station	$77,806
Sales Tax	$4,609
Total Station Cost	**$84,915**

Of this $84,915, the South Coast AQMD funded $60,000 and the district contributed $24,915.

Commercialization and Applications

The West Covina Unified School District Time-Fill CNG fueling systems is comprised of two BRC FuelMaker FMQ-8-36 CNG compressors, producing 6.7 GGE/hr @3600 psig, with nine connector hoses to fill 9 Type D CNG school buses concurrently. The buses average 3 miles/GGE, and 30 miles/day and 1.5 hours of dedicated fuel time or nearly 14 hours for all nine. Field trips can be 150 miles and require 8 hours of dedicated fill time typically over the weekend. Jaycox Construction provides monthly servicing of the system. The system continues to meet the district's needs and the dual compressor system provides the district with redundancy to be able to conduct maintenance on one compressor and still have CNG fueling available. WCUSD recently secured a renewable natural gas (RNG) agreement and will earn dividends from the Low Carbon Fuel Standard and federal Renewable Fuel Standard programs to help lower operating expenses.

South Coast AQMD Contract #16075 **March 2020**

Purchase One Heavy-Duty CNG Powered Truck

Contractor
City of Desert Hot Springs

Cosponsors
South Coast AQMD
Mobil Source Review Committee (MSRC)

Project Officer
Phil Barroca

Background
In 2009, the Mobil Source Review Committee (MSRC) awarded the city of Desert Hot Springs $25,000 in match funds to purchase a heavy-duty dedicated compressed natural gas (CNG)-powered stakebed truck estimated to cost $50,000. Due to the financial impact of the 2008-2015 recession, the City's budget was unable to include the necessary cost share for the grant funds. By 2014, MSRC was informed that the City was not able to meet its cost share, making indefinite the purchase of the vehicle. In October of 2015, with the assistance of a coordinator for the Clean Cities Coachella Valley Region, Mr. Richard Cromwell, Desert Hot Springs was able to secure Clean Fuels Funds (CFF) from the South Coast AQMD as a cost share in addition to the already secured funds approved by MSRC. To cover the increased price of the vehicle ($50,000 in 2009 to $63,000 in 2015) the City was awarded an additional $38,000 in matching CFF funds.

Project Objective
In 2015, the South Coast AQMD approved match funding with the MSRC to support the purchase one new heavy-duty CNG truck for the city of Desert Hot Springs. The purchase of this new cleaner natural gas-powered truck would be countered with the removal of a comparable truck with higher emissions. The new CNG vehicle would be placed into service with the City's Public Works Department. The CNG-powered vehicle would provide the City with a clean, alternative fuel heavy-duty vehicle to help lower criteria pollutants and greenhouse gas (GHG) emissions. The vehicle would be domiciled at the City yard. Refueling would be provided at the upgraded CNG refueling station owned and operated by Clean Energy at the Mission Springs Water District in the city of Desert Hot Springs. Clean Energy dispenses low carbon intensity renewable natural gas (RNG) under the name Redeem™. The City, in turn, would remove a 2007 gasoline powered Ford pick-up from their fleet.

The South Coast AQMD's Air Quality Management Plan relies on accelerated implementation of advanced technologies within Southern California to achieve federal and state ambient air quality standards and further reductions in air toxic exposure. Conversion of high mileage gasoline or diesel-powered vehicles to natural gas-powered vehicles can significantly reduce criteria pollutants, GHG emissions, and the use of petroleum-based fuel.

Figure 1: F-450 CNG Stakebed Truck

Technology Description
The technology employed in this project includes the conversion of a new 2016 original equipment manufacturer (OEM) gasoline-powered heavy-duty 6.8-liter V-10 spark-ignited engine to a dedicated CNG engine using a California Air Resources Board (CARB) certified CNG conversion system that includes pressure regulators, injectors and on-board high pressure CNG storage tanks and fuel lines. The OEM truck is a 2016 Ford F-450 2x4 stakebed truck chassis with a gross vehicle weight rating (GVWR) of 16,500 lbs. The CNG conversion system is a 2016 CARB-certified Impco system with 31 gasoline gallon equivalent (GGE) @ 3600 psig of onboard CNG storage. The CNG storage system is comprised of two identical high pressure Type 3 gas cylinders positioned behind the cab. The CARB

Executive Order for the Impco system is A-328-0033 which is certified to the 0.2g-NOx/bhp-hr heavy-duty on-road NOx standard. All conversions were performed prior to vehicle delivery and under the supervision of Miramar Truck Center, San Diego, CA. The vehicle is fueled by CNG or low carbon intensity renewable natural gas (RNG) that is dispensed at the local Clean Energy station under the tradename Redeem™.

Status

Desert Hot Springs took delivery of a new 2016 heavy-duty CNG-powered Ford F-450 stakebed on April 28, 2016. This vehicle was funded through the South Coast AQMD and the MSRC. To acknowledge the efforts of those involved in this project, the City issued a press release on May 26, 2016 announcing the vehicle's delivery. In addition to acknowledging the funding partners, special recognition was made to two representatives from the Clean Cities of the Coachella Valley Region, Mr. Richard Cromwell and Mr. Jack Hogan.

Under the contracts for this project, the City concurrently and permanently removed a 2007 gasoline-powered Ford F-150 pick-up with 25,459 miles. This vehicle was dismantled by Dick's Auto Wrecking in Fontana, CA. The new CNG-powered heavy-duty truck is deployed by the City's Public Works Department and has accrued about 5,000 miles. The vehicle is fueled with low carbon intensity RNG from the Clean Energy natural gas refueling station located in the city on Park Lane and on the Mission Springs Water District property. This station was upgraded with funding through AB1318.

Results

The city of Desert Hot Springs has deployed the heavy-duty CNG truck under this project with the Department of Public Works (DPW). The City's DPW assigns a work truck to each staff person. Because of the current configuration in the flatbed, the truck is being used to haul signs to notify drivers of pending and ongoing road work and road closures. The vehicle is also utilized to place barricades when requested by the City's police department. As these work efforts are less frequent, this truck sees somewhat limited daily driving. The DPW recognizes the truck is capable of much more and expects to use it more in the field for green waste and trash removal citywide. The vehicle's 31 GGE of fueling provides approximately 300 miles of range. City staff and vehicle operators are satisfied with the vehicle's ability to perform.

Figure 2: CNG F-450 Being Deployed

Benefits

The CNG powered Ford F-450 is powered by low carbon intensity RNG supplied at the local Clean Energy station on Park Lane and the engine system is certified to federal on-road heavy-duty NOx standard of 0.2g-NOx/bhp-hr. The City estimates that the CNG vehicle is generating 30% less NOx than a comparable diesel-fueled vehicle and the use of low carbon intensity RNG is contributing to lower GHG emissions. Use of the vehicle reduces immediate air pollution exposure to the residents of and visitors to the City.

Project Costs

Purchase and registration of the CNG truck cost $61,387.98. The vehicle was funded with $25,000 by the MSRC, and $36,387.98 from the South Coast AQMD. Costs to insure and operate this vehicle were paid for by the city of Desert Hot Springs.

Commercialization and Applications

The city of Desert Hot Springs acquired this vehicle in 2016 and has continued to operate this vehicle in limited but necessary public works activities. The vehicle continues to meet the City's performance standards and has not incurred any major issues that has prevented its routine usage. The vehicle has been maintained by Palm Springs Motors. Maintenance costs associated with this technology has been comparable to conventional fueled vehicles used in comparable applications. The vehicle also performs well and without incidence during the extreme high summer temperatures in the Coachella Valley.

South Coast AQMD Contract # 15680 **June 2020**

Develop Detailed Technology and Economics Based Assessment for Heavy-Duty Advanced Technology Development

Contractor

National Renewable Energy Laboratory (NREL)
Ricardo Strategic Consulting (Ricardo)

Cosponsors

Southern California Gas Company

Project Officer

Phil Barroca

Background

In August 2015, the South Coast AQMD, with co-funding from the Southern California Gas Company (SoCalGas), executed a contract with the U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) to develop a detailed technology and economics-based assessment for the deployment of advanced heavy-duty vehicle technologies suitable in commercial fleet applications. This project, commonly referred to as ComZEV, analyzed six technologies which included a 2010 compliant diesel, a 0.02g-NO_x/bhp diesel, a 0.02g-NO_x/bhp-hr compressed natural gas (CNG) alone as well as with a hybrid electric, battery-electric, and battery-electric with fuel cell range extender. The additional technologies were six vehicle vocations including Class 5-6 medium-duty delivery vehicles, Class 8 port drayage, short haul, and long-haul trucks and Class 8 refuse and transit buses.

COMZEV Key Technology and Vocation Analysis Matrix

Technology / Vocation	Class 5-6 Medium Duty Delivery	Class 8 Port Drayage	Class 8 Short haul	Class 8 Long Haul	Class 8 Refuse Truck	Class 8 Transit Bus
Conventional Diesel	✓	✓	✓	✓	✓	✓
Diesel .02g NOx	✓	✓	✓	✓	✓	✓
CNG SI .02g NOx	✓	✓	✓	✓	✓	✓
CNG SI .02g NOx Hybrid	✓	✓	✓	✓	✓	✓
Battery Electric	✓	✓	X	X	✓	✓
H2 Fuel Cell (Gaseous Storage)	✓	✓	✓	✓	✓	✓

Figure 1 – Final Technology/Vocation Matrix

Project Objective

NREL and Ricardo developed a detailed technology and economics-based roadmap for the adoption of advanced commercial vehicle technologies to reduce nitrogen oxides (NO_x) and greenhouse gas (GHG) emissions through 2050, with an emphasis on the years 2023 and 2032 to correspond to the Federal Clean Air Act (CAA) 8-hour ozone standards attainment deadlines. The ComZEV study was to identify barriers and opportunities to match advanced technology options to key commercial medium- and heavy-duty vehicle vocations in Southern California.

Technology Description

Ricardo developed Total Cost of Ownership (TCO) and Adoption-Rate models and applied data from NREL's Fleet DNA vocational vehicle and duty-cycle database. The Adoption Rate model forecasts technology adoption based on both economic and non-economic factors that influence buying decisions by fleet owners. The model compares and contrasts potential adoption rates for zero- and near-zero emission truck technologies and can help assess the benefits and costs of various incentives or mandates, analyze short- and long-term total cost of ownership between technologies and identify key factors that create "tipping points" for widespread adoption. It can also asses the importance of sales volumes and scalability, barriers in early commercialization and options to address these, sensitivity to fuel prices and other external factors. Technology adoption rates enable quantifying NO_x and GHG emission reductions and goals through 2050. The Technology Adoption Scenario is enhanced through feedback from industry and governmental stakeholders and the incorporation of non-economic and non-technical market drivers and barriers.

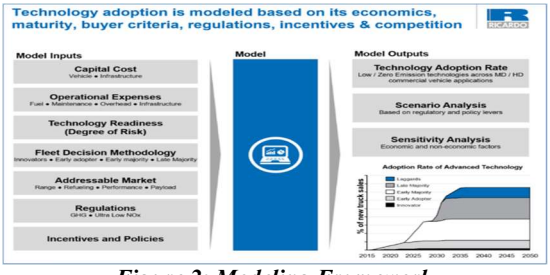


Figure 2: Modeling Framework

Status

A detailed technology and economics-based roadmap for the adoption of advanced commercial vehicle technologies was developed with the focus of quantifying key technological, market, and policy barriers to alternative vehicle adoption. Vehicle adoption modeling was completed using detailed choice-modeling methodology and the resulting impacts on NO_x and GHG emissions through 2050 were evaluated for the South Coast Air Basin in California.

Results

Results indicate that there are many drivers of vehicle adoption that involve cost. The key drivers appear to be economies of scale and fuel cost. Results also indicate that all technologies play an important role in reducing both NO_x and GHG emissions. CNG is the dominant alternative over diesel near-term for short-haul, long-haul, transit bus and refuse truck markets due to having the lowest cost. Battery-electric is the most economically attractive for low range applications with battery-electric hydrogen fuel cells offering the most attractive economics of all technologies for medium- and long-range applications. Key barriers to adoption of the advanced vehicle technologies include limited refueling infrastructure in the case of CNG. Hydrogen range limitations or payload restrictions are barriers in battery-electric trucks, and high costs are barriers for hydrogen fuel and hydrogen fuel cell technology.

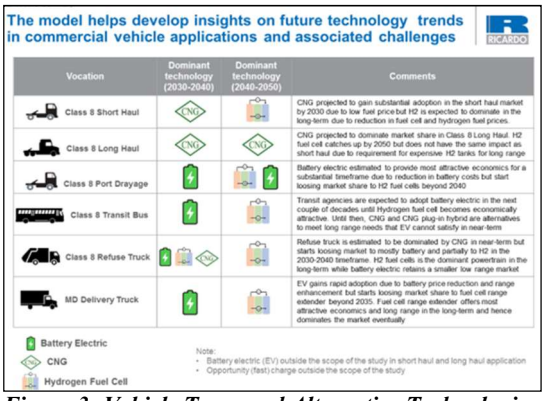


Figure 3: Vehicle Types and Alternative Technologies

Benefits

The key benefit of this study is the development of a roadmap for near-zero and zero-emission technologies calibrated to South Coast AQMD air quality attainment objectives that comprehends NO_x and GHG reductions and the economics of deployment.

The model showed that there are three vocations that comprise most of the GHG and NOx emission reductions through 2050 for the Southern California fleet. The three include the Class 8 Long Haul, the Class 8 Drayage, and the Class 5-6 MD Delivery. The Class 8 Long Haul emissions are primarily a function of the high travel requirement for this vocation combined with the improved diesel fuel economy and high CNG and hydrogen adoption by 2050. The Class 8 Drayage emissions are significant due to the vocation's high emission rate (poor aftertreatment) combined with early adoption of battery electric technology. The Class 5-6 MD is included due to delivery emissions caused by a large vehicle population combined with the adoption of battery electric technology, hydrogen technology, and improved diesel fuel efficiency. All powertrain technologies contribute to different market applications and timing, providing significant reductions in NO_x (60-62%) and tailpipe CO_2 (37-39%) emissions reduction by 2050 relative to the business-as-usual scenario.

Project Costs

The total project costs are noted below with payouts shared equally by South Coast AQMD and SoCalGas.

Task	NREL	Ricardo	Total
Total	$230,000	$270,000	$500,000

Commercialization and Applications

The addressable market is expected to grow as refueling infrastructure develops to provide sufficient coverage and battery price and energy density improves to provide more range. Hydrogen fuel cell and fuel costs are expected to reduce dramatically beyond 2035 due to synergies with light-duty fuel cell vehicle manufacturing and adoption.

The roadmap provided Total Cost of Ownership and Adoption-Rate models to estimate adoption rate projections and the resulting fleet emission impacts based on best available data on economic, governmental and societal drivers at the time of the study. This tool and methodology can be updated with the latest information and be used to conduct additional sensitivity analysis as technologies mature and the economics continue to evolve providing a guide for future California funding incentives.

South Coast AQMD Contract #17277 **February 2020**

Conduct Market Analysis for Zero-Emission Heavy-Duty Trucks in Goods Movement

Contractor
University of Southern California

Cosponsors
US Department of Transportation
Volvo Research and Education Foundation
Majestic Realty

Project Officer
Seungbum Ha

Background

Achievement of a zero emissions (ZE) vehicle fleet is part of the long range plans for California, the South Coast AQMD, and more recently the San Pedro Bay Ports and many local jurisdictions. The use of ZE heavy duty trucks (HDTs) for freight movement remains a challenge particularly in the heavy duty sector.

Project Objective

This research examines the potential for ZE or near-ZE vehicles with respect to freight operations, economic impacts and environmental benefits. The focus is on HDTs used in short-haul drayage services, one of the most promising market segments for early adoption. Drayage service is defined as short haul pickup/delivery of goods to/from ports, warehouse and distribution centers, and intermodal facilities. To provide a comprehensive assessment of the market potential for ZE and near-ZEHDTs, several dimensions of their costs and benefits were considered.

Technology Description

ZEHDTs have different performance characteristics than conventional diesel HDTs, namely range, load capacity, and refueling time. For a given set of pickups/deliveries, the number of trucks required depends on the range of the vehicle and its load capacity. These in turn determine miles traveled (including associated labor costs) and refueling time costs. Near ZE HDTs, such as hybrid electric, have similar performance characteristics to conventional diesel.

A simulation model and actual drayage trip data were used to generate a set of simple drayage demands to be accomplished over a single eight-hour shift day. The simulation model optimized routes so that total costs are minimized. Using an all diesel fleet as the base case, the simulation model was used to estimate the number of trucks required to meet demands. ZE trucks were incrementally introduced into the fleet with subsequent model runs. The model was run until the maximum possible number of ZE trucks was reached.

Three target years, 2020, 2025, and 2030, and three vehicle technologies: diesel, natural gas hybrid, and battery electric were considered. Performance attributes for 2020 are based on data from field tests; attributes for 2025 and 2030 are based on most recently available data on expected improvements in the various technologies.

Two case studies were conducted of short haul firms to test the potential penetration of ZEHDTs with more realistic truck activity. The case study data considers both range and charging constraints, as well as the additional effect of the gross vehicle weight restriction.

The simulation and case study research were supplemented with two rounds of interviews and a stated preference survey to gather information on trucking industry perspectives. Interviews were conducted with OEMs as well as drayage firm owners and operators. A market analysis of drayage activity concentrations was also conducted.

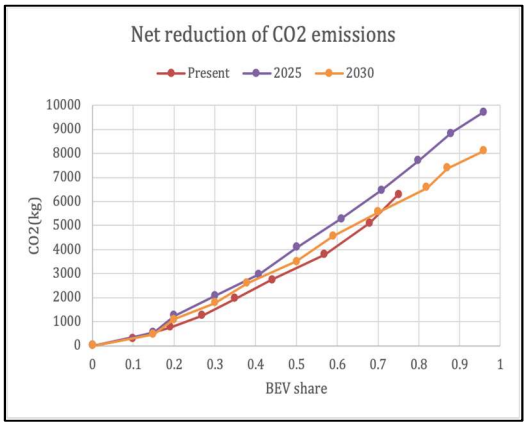
Status

This project has been completed and the final report published in December 2020 on the METRANS website:
https://www.metrans.org/research/developing-markets-for-zero-emission-vehicles-in-short-haul-goods-movement.

Results

Results show a clear trade-off between emissions reductions and larger BEV fleet size. In 2020, the maximum possible share of BEVs is 75% and requires a near doubling of the fleet. In 2025 and 2030, the maximum possible share rises to 96%, and the vehicle fleet increases by about one third in 2025 and 20% in 2030. Increased fleet size adds to costs, leading to clear tradeoffs between emissions reductions and drayage costs. Figure 1 compares the net reduction of CO2 for the three target years.

Figure 1: BEV Share and Net CO2 Reductions



Simulation results were used to generate four scenarios: all diesel, all NG hybrid, midpoint ZE, and maximum ZE. Diesel and hybrid trucks have similar range and refueling requirements, so differ only in emissions and costs. Annualized emissions savings relative to diesel were estimated. See Table 1. Max ZE has the greatest emissions net savings for all but NOX in 2020.

Table 1: Net Annualized Emissions Savings

Net Emissions Savings	All NG Hybrid	Midpoint ZE	Max ZE
PM 2.5 (g)			
2020	2350	3525	8075
2025	1175	3150	7525
2030	1175	3275	7525
NOX (kg)			
2020	2725	675	1550
2025	1225	600	1425
2030	1225	625	1425
CO2 (kg)			
2020	1311500	687750	1576500
2025	1160500	1019750	2429500
2030	1040500	880500	2024000

The annualized cost per unit of emissions removed relative to diesel HDTs was estimated. Capital, vehicle operations, and driver costs were included. The all hybrid alternative is the least cost alternative for all emissions and all target years. This is due to the lower operating costs of hybrids and lower emissions relative to diesel. At the same time, the hybrid alternative does not require additional vehicles, and therefore has much lower capital costs than the ZE alternatives. The max ZE alternative generates modest savings in 2030, but of much lower magnitude than the hybrid alternative. Results illustrate the contrast between possible policy objectives. If reducing emissions is the most important objective, ZEHDTs meet that objective, but at very high cost relative to other alternatives.

Benefits

The main benefit of this project is incorporating freight operations into assessments of the market for ZEHDTs in the short-haul market. The project provides a set of findings and recommendations that can provide guidance for policy makers and regulators.

Finding 1: Current state of BEV technology-BE ZEHDTs have limited application in the short haul heavy truck market. *Recommendation*: State / local policy should take into account the full impacts of ZEHDTs on freight operations and costs

Finding 2: NG hybrid near zero vehicles are preferred in the short term. *Recommendation:* State / local policy should be more flexible and consider hybrid technologies as viable near and middle term options for GHG and other emissions reductions

Finding 3: The medium-term market is promising and depends critically on the rate of improvement of battery technology and rate of decline in vehicle price. *Recommendation:* Continue to promote and invest in battery technology improvements

Finding 4: The medium-term market depends on charging infrastructure and energy availability. *Recommendation:* Develop a comprehensive investment plan for public charging stations and identify a funding source

Finding 5: The medium-term market depends on subsidies. *Recommendation*: Develop a comprehensive subsidy and incentive program to promote ZE and near-ZE purchase and use and fund at a sufficiently high level

Project Costs

SCAQMD	$350,000
Caltrans	$126,000
Volvo Research and Education Foundation	$25,000
Majestic Realty	$23,000
Total	**$524,000**

Commercialization and Application

The results of this project can be applied to current and future rulemaking on emissions reductions in the heavy duty vehicle sector. The research should be extended to consider weight limits, a broader set of operating conditions, infrastructure costs and availability and full life cycle costing.

South Coast AQMD Contract #18206 **June 2020**

Assess Air Quality and Greenhouse Gas Impacts of a Microgrid-Based Electricity System in Southern California

Contractor

University of California, Irvine (UCI)

Cosponsors

UCI Advanced Power and Energy Program
National Science Foundation,
Southern California Gas Company

Project Officer

Seungbum Ha

Background

The development of microgrids is gaining attention as a means of increasing the resilience and reliability of the electricity system, reducing criteria pollutant and greenhouse gas emissions of the electricity and transportation sectors, and increasing the deployment of renewable power generation resources in serving the electric load demand. As microgrids become prevalent, capacity for electricity generation, previously outside the basin, will be retired and replaced with new capacity inside of the Southern California Air Basin (Basin). The potential of microgrids to substantially reduce the criteria pollutant emissions in Southern California depend entirely on the design of the microgrids.

Project Objective

This project is the first to explore microgrid design features that facilitate zero emission of both criteria pollutant and greenhouse gasses with a focus on the following three tasks:

Task 1. Commercial, Industrial and Petroleum Refinery Microgrids: Assess fuel cell technology to mitigate pollutant and greenhouse gas emissions.
Task 2. Renewable Fuel Blending: Assess the emissions impacts of renewable fuel blending in the natural gas system.
Task 3. Public Mobility: Compare battery electric buses and hydrogen fuel cell electric buses.

Technology Description

Task 1. Two approaches individually and in combination were considered: 1) greenfield applications where SOFC replace a productive process, e.g., power plant, SMR; and 2) retrofit applications, with MCFC assumed to be placed downstream of exhaust gas streams as a post-combustion system, which would involve every source of emissions. Scenarios were assessed using detailed thermodynamic models to determine the feasibility and performance within the scenario configurations including emission reductions for a given refinery deployment scenario
Task 2. Determining the change in emissions from a fuel composition shift to H2 blends requires assessment of impacted combustion devices. UCI has developed and demonstrated a platform using in-lab testing and numerical modeling to investigate emissions and stabilities with different fuel compositions for combustion equipment and assessed the combustion performance of residential and commercial appliances including cooktop, oven and broiler burners, central forced air furnaces, and water heaters. Numerous aspects complicate a clear understanding of how H2 addition may affect emissions including numerous potential pathways and quantities of H2 production, the size and complexity of the NG system, how the diverse range of end-use sources may be affected, lack of available data, and others.
Task 3. The simultaneous operation of battery electric and hydrogen buses provides a unique opportunity to develop an evaluation framework under consistent conditions. The data collected from the fleet enabled a comprehensive comparison of the two technologies and were used in statistical analysis to assess the performance of ZEBs and assess impact of various factors on overall performance of different bus technologies. A detailed life cycle assessment analysis was done to assess economic and environmental impact of different ZEBs, and a strategy was developed to optimize the technology-mix of the a zero-emission to help transit agencies transition to a zero-emission fleet without impacting their service and routes.

Results

Task 1. Emission reductions were identified for the scenarios in this work scale with the aggressiveness of fuel cell deployment from relatively minor up to 66% of total refinery NO_x for the widespread use of MCFC. When applied to all refineries, the largest

NO_x reductions occur in northern California with lesser impacts in Basin. Emission reductions translate to a range of possible air quality impacts. For an aggressive MCFC deployment, ozone reductions peak at -2.6 ppb. Improvements in $PM_{2.5}$ for summer are substantial, exceeding 8 µg/m^3 in the Basin and occurring in other regions of the state. Similarly, improvements reach 10 µg/m^3 in winter in the Basin. highlighting the importance of VOC emissions in secondary $PM_{2.5}$ formation pathways.

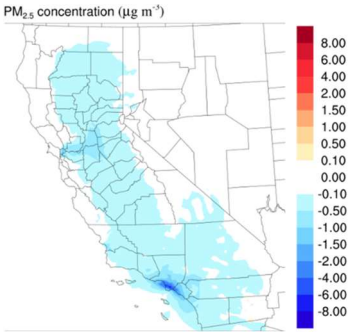


Figure 1: Summer 24-h PM2.5 from Reference Case for Widespread Use of MCFC in California Refineries

Task 2. Projected impacts on state-wide NOx range from a 6% decrease to a 4% increase demonstrating the range of effects from transitions in NG system fuel composition and the lack of current understanding of many important factors that will ultimately determine the real-world effects. Air quality impacts follow suit, e.g., ozone changes vary from -2.4 to +1.6 ppb in the 20% best and worst cases, respectively. Similar impacts are noted for PM2.5 in winter and summer with peak changes in the Central Valley and Basin with similar importance.

Task 3. Results of the study include comparison of total cost of ownership, economic and environmental impacts, and overall assessment of fuel cell electric buses (FCEBs) and battery electric buses (BEBs).

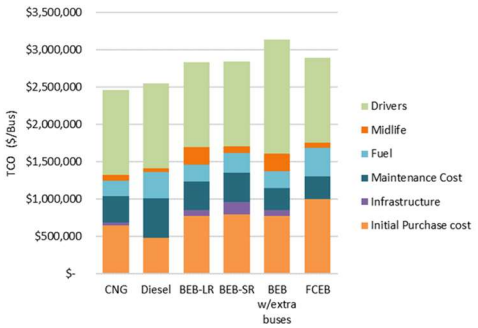


Figure 2: Total Cost of Ownership comparison

Commercialization and Applications

The following are main conclusions from this work:

- Impacts on ozone follow trends for NO_x and are most prominent downwind of refineries in northern California. Peak MD8H reductions range from -2.6 ppb to -0.55 ppb depending on the scenario.
- Impacts on $PM_{2.5}$ are substantial in summer and winter, i.e., potentially exceeding 8 ug/m^3 and 10 ug/m^3 respectively. Peak improvements are in Basin, and reductions occur in the S.F. Bay Area and Central Valley.
- Impacts on total statewide NO_x include 6% decreases to 4% increases demonstrating the wide range of possible impacts depending on blend level, equipment assumptions, and others
- FCEB total cost of ownership is comparable to that of BEB-Long range
- For BEBs, the total cost of ownership is impacted by the pricing strategies and tariffs set by the utility or microgrid
- Results of MCDA indicate that FCEB and BEBs-Long Range (BEB-LR) with plug-in charging are preferred over BEBs-Short Range (BEBs-SR) with on-route charging

Benefits

The use of fuel cell systems at industrial facilities can provide notable improvements in regional levels of ozone and $PM_{2.5}$ which in turn will provide substantial benefits to human health within California. The addition of H2 may also provide important AQ co-benefits to sensitive urban regions. Conversely, care must be taken to avoid AQ worsening in those same areas. the overall criteria pollutant and greenhouse gases are reduced with the deployment of BEBs and FCEBs and has the potential to improve air quality as well as helping mitigate and reduce impacts of climate change.

Project Costs

The cost of the project was $450,000. South Coast AQMD provided $250,000 and $200,000 of match funding was provided by a combination of UCI, the National Science Foundation, and Southern California Gas Company.

South Coast AQMD Contract #17278 **July 2020**

Develop Freight Loading Strategies for Zero-Emissions Heavy-Duty Trucks in Goods Movement

Contractor

University of Southern California (USC)

Cosponsors

National Science Foundation
Volvo Research and Education Foundation

Project Officer

Seungbum Ha

Background

Recent advances in sensing and navigation technologies make it easier to route vehicles from origin to destination based on traffic characteristics obtained from historical and available real time traffic data. Current applications however do not distinguish between different classes of vehicles and associated dynamics which often have a big impact on travel time and traffic flow characteristics. The lack of coordination among different shippers, along with their lack of a coordinated exchange of information makes it difficult to predict changes in travel times as it relates to upcoming freight loads. In general, the current freight transportation system is full of inefficiencies leading to imbalances in traffic with respect to space and time, and these imbalances have significant individual and environmental costs. Information technologies, software and hardware technologies as well as the emergence of battery electric trucks offer a strong potential for dramatic improvements in balancing freight loads in multimodal networks.

Project Objective

The objective of this project is to develop a methodology to reduce inefficiencies in the current freight system by using a centrally coordinated load balancing system to provide routes to users that benefit the overall system. This load balancing system should lead to system and user benefits in terms of mobility and environmental impact for mixed fleets of diesel and zero-emission freight vehicles (ZEFV) as well as taking into consideration concepts such as empty container reuse.

Technology Description

The developed freight load balancing system is based on a co-simulation optimization approach that combines real time traffic simulators with a route optimization algorithm in a feedback configuration as shown in the figure below.

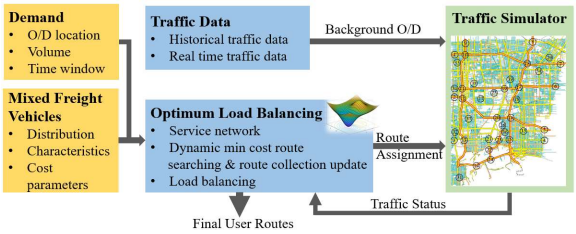


Figure 1: Co-Simulation Optimization Method

The advantage of the proposed approach is that it makes use of available software tools and fast computers to evaluate the impact on travel times of the initially generated optimized load balancing routes and then makes the necessary changes taking into consideration the nonlinear impact of loads on travel time. The impact of loads on travel times is something that current routing systems do not consider which often leads to possible unintended load imbalances. The technology assumes a "system manager" that receives all user requests for route planning and allocates loads to time, space, and mode windows to minimize an overall system cost. The load balancing system is developed for one type of truck (diesel) and was then extended to two type of trucks, diesel and battery electric. The use of mixed fleet of diesel and electric trucks introduces additional constraints and cost criteria. Electric trucks have a higher capital cost, shorter range, and longer refueling time than diesel trucks. The proposed technology is shown to be flexible to include additional freight technologies and concepts such as the empty container reuse that aims to reduce the empty container trips.

Status

The project was officially completed February 2, 2020 with the final report submitted to South Coast AQMD at the end of January 2020.

Results

The proposed centrally coordinated freight load balancing system has potential for improvements in balancing freight loads across the road and rail networks. All simulated scenarios showed consistent improvements in fuel economy and emissions. Electric trucks can be incorporated in the proposed load balancing system despite the added constraints of range and charging times.

Based on models of diesel and electric engines and tests with different speed cycles the electric engines are found to consume less energy than diesel except during congestion. The figures below an example of how fuel consumption and emissions change as the number of electric trucks increases in a heavy traffic scenario.

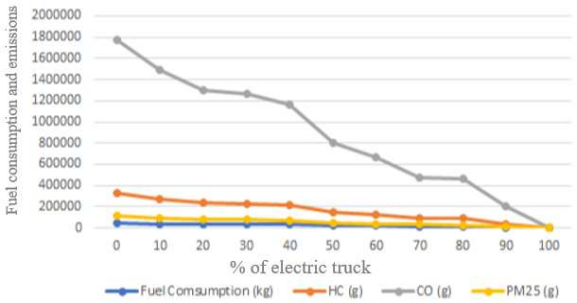


Figure 2a: Reduction of Fuel Consumption and Emissions (HC, CO, PM25) as Percent of Electric Truck

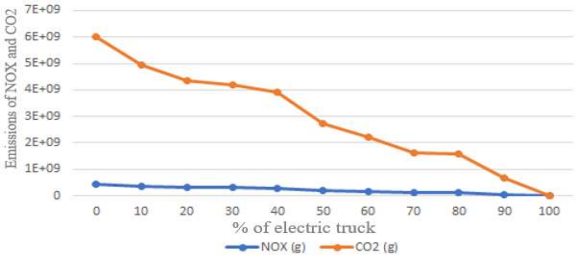


Figure 2b: Reduction of Emissions (NOx, CO2) as Percent of Electric Truck

In a mixed fleet of diesel and electric vehicles the total energy cost without including charging cost decreases as the percentage of electric vehicles increases. Charging, however, during driver working times adds to the overall costs and makes the overall cost higher as the percent of electric trucks increases. The concept of empty container reuse and other technologies and concepts can be easily incorporated in the proposed load balancing approach.

Benefits

A centrally coordinated freight load balancing system can reduce inefficiencies of freight movements in complex surface networks by achieving a better distribution of freight loads in time and space and reducing the overall cost in terms of mobility under various traffic conditions as shown in the figure below.

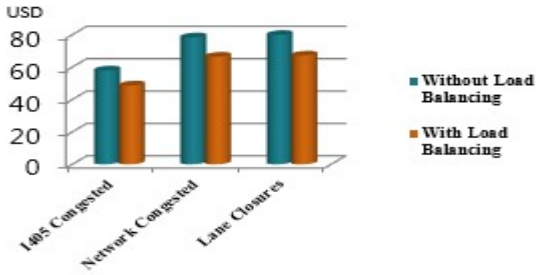


Figure 3: Cost Benefits under Different Conditions

The benefits on fuel consumption and emissions (HC, CO, NOx, CO2, PM25) in the case of diesel trucks gained by load balancing generated using the Environmental Protection Agency model MOVEs are of the order of about 5% under light, 9% under medium traffic conditions and 22% under heavy traffic conditions when compared with no load balancing.

Project Costs

The total project cost was $1,001,000. South Coast AQMD's share was $200,000 with the remaining $801,000 contributed by the National Science Foundation and the Volvo Research and Education Foundation.

Commercialization and Applications

Shippers are very sensitive to costs and, in general, open to new technologies if they can see the benefit. The proposed centrally coordinated freight load balancing system shows the potential benefits of central coordination for freight routing and offers a strong incentive for commercialization.

South Coast AQMD Contract #16200 **April 2020**

Cosponsor Regional Universities for US Department of Energy EcoCAR3 Competition

Contractor

California State University, Los Angeles

Cosponsors

US Department of Energy (DOE)
General Motors (GM)
California State University Los Angeles

Project Officer

Lisa Mirisola

Background

EcoCAR 3 is a four-year advanced plug-in hybrid passenger vehicle design-and-build competition sponsored by the United States Department of Energy (DOE) and General Motors and managed by Argonne National Laboratory. Of the 16 North American universities chosen to participate, California State University of Los Angeles (Cal State LA) is the only competitor from California. In keeping up with Los Angeles history and current needs, the team elected to design a police themed vehicle with a pursuit capability for this EcoCAR 3 competition.

Project Objective

Each team redesigned a stock gasoline Chevrolet Camaro into a hybrid vehicle that reduced the environmental impact while retaining performance, safety, and consumer appeal. The cornerstone goal of the program is the creation of the next generation of engineers by providing them with real-world research experience in the development of extremely complex advanced vehicle technologies.

Technology Description

The Cal State LA team designed a Parallel Post Transmission Plug-in Hybrid Electric Vehicle based on a 2016 V6 Chevrolet Camaro.

The engine selected was the GM 182 Hp 2.4L Ecotec engine that utilizes renewable ethanol fuel for reduced overall emissions. The 135 kWh UQM Power Phase electric motor used was also deployed for regenerative braking. The electric motor is fed from a 12.6 kWh, battery pack. A new control system was designed to control the hybrid functionality and the new components.

Status

Year 4 of the competition was dedicated to completing the design-and-build project resulting in a vehicle in performing condition. This included updating multiple systems including installation of the air conditioning and on-board battery charger. In addition to addressing the technical development, the vehicle was appropriately dressed in the police "uniform", as in Figure 1.

Figure 1. Fully Assembled Cal State LA Police Vehicle

Results

The engineering subteams throughout the year produced eleven technical reports and presentations recording the design and vehicle integration updates. In addition to working on all vehicle systems, the engineering vector was applied to the design of the control software and autonomous driving technology.

Two graduated students working in the vehicle controls area authored two papers: "MPC-Based Power Management Strategy to Reduce Power Loss in Energy Storage System of HEV – Improved Model" and "Neuroevolution Based Optimization of Hybrid Transmission Shift Points". These papers were presented at the 6th Annual IEEE SusTech Conference 2018 in Long Beach, CA.

The communications team produced eleven reports and presentations, performed outreach events, created videos and blogs and updated the team website and social media. The EcoCAR team

organized two workshops for about 150 -200 middle-school students. Throughout the year the team hosted several hundred students from local schools in the EcoCAR garage. Ethnically diverse members shared their life experiences to inspire students to pursue a college education.

In addition, the EcoCAR team has participated in numerous public outreach events where members displayed the vehicle and engaged the public.

Figure 2. Cal State LA Team Conducts a Quiz on Hybrid Cars to Los Angeles Sheriff Department Officers, Diamond Bar, CA, April 2018

This included the Car Classic Auto Show hosted by the Art Center College of Design held at the Angel City Brewery, the Diamond Bar City Birthday Fair (see Figure 2), and the final competition at the Fontana Speedway.

Benefits

About forty students participated on the team in Year 4. Several students graduated, securing jobs in the automotive and high-tech sectors, including five new engineers at General Motors. Participation in EcoCAR has resulted in opening doors to team participants from disadvantaged communities such as East Los Angeles and providing them with the opportunity to obtain employment in high-pay engineering jobs at such coveted giants as GM, Boeing, and Northrop Grumman

In recognition of the team's outreach and public education accomplishments, Cal State LA has received the 2018 Clean Air Award from South Coast AQMD (see Figure 3).

Figure 3. Cal State LA EcoCAR Team Accepts the Clean Air Award, October 2018

Project Costs

Project Partner	Funding
US DOE, Argonne National Lab, CARB	$200,000
Chevrolet Camaro: GM **Sponsorship Training:** MathWorks, Siemens NX, and Autonomie, **Components/Software:** General Motors, MathWorks, Freescale, BOSCH, ETAS, Siemens, GKN Driveline, Woodward, EnerDel, Ricardo, New Eagle, and A123 Systems.	$250,000
CSULA	$250,000
South Coast AQMD	$100,000
Total (approximate)	$800,000

Commercialization and Applications

The police-oriented vehicle fuses the unique law enforcement needs and plug-in hybrid capabilities. Hybrid functionality saves fuel and provides financial savings to police departments. It has three distinct modalities: stakeout mode – the engine is off when parked, with the air conditioning and equipment run via battery pack; patrol mode – the car is driven in full electric mode and releases no emissions, and lastly, pursuit mode – both its electric motor and its engine are operating, optimizing energy consumption, even during high-speed chases.

Appendix D

Technology Status

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Technology Status

For each of the core technologies discussed earlier in this report, staff considers numerous factors that influence the proposed allocation of funds, ranging from overall Environment & Health Benefits, Technology Maturity and Compatibility, and Cost, summarized in this technology status evaluation system.

Within the broad factors included above, staff has included sub-factors for each specific type of project that may be considered, as summarized below:

Environment and Health

Criteria Pollutant Emission Reduction potential continues to receive the highest priority for projects that facilitate the NOx reduction goals outlined in the 2016 AQMP. Technologies that provide co-benefits of Greenhouse Gas and Petroleum Reduction are also weighted favorably, considering the Clean Fuels Program is able to leverage funds available through several state and federal programs, as well as overall health benefits in reducing exposure to Ozone and PM2.5, especially along disadvantaged communities.

Technology Maturity & Compatibility

Numerous approaches have been used to evaluate technology maturity and risk that include an evaluation of potential uncertainty in real world operations. This approach can include numerous weighting factors based on assessed importance of a particular technology. Some key metrics that can be considered include Infrastructure Constructability that would evaluate the potential of fuel or energy for the technology and readiness of associated infrastructure, Technology Readiness that includes not only the research and development of the technology, but potential larger scale deployments that consider near-term implementation duty and operational compatibility for the end users. These combined factors can provide an assessment for market readiness of the technology.

Cost/Incentives

The long-term costs and performance of advanced technologies are highly uncertain, considering continued development of these technologies is likely to involve unforeseen changes in basic design and materials. Additionally, economic sustainability – or market driven – implementation of these technologies is another key factor for the technology research, development, demonstration and deployment projects. Therefore, in an effort to accelerate the demonstration and deployment, especially some pre-commercialization technologies, incentive programs such as those available from local, state and federal programs are key, but may be underfunded for larger scale deployments.

Staff has developed an approach to evaluating the core technologies, especially some of the specific platforms and technologies discussed in the draft plan and annual report. The technology status evaluation below utilizes experience with implementing the Clean Fuels Program for numerous years, as well as understanding the current development and deployment state of the technologies and associated infrastructure, and are based on the following measurement:

● Excellent ◓ Good ○ Satisfactory ◒ Poor • Unacceptable

The table below summarizes staff evaluation of the potential projects anticipated in the Plan Update, and it is noted that technology developers, suppliers and other experts may differ in their approach to ranking these projects. For example, staff ranks Electric/Hybrid Technologies and Infrastructure as Excellent or Good for Criteria Pollutant and GHG/Petroleum Reduction, but Poor to Good for Technology Maturity & Compatibility, and Satisfactory to Unacceptable for Costs and Incentives to

affect large scale deployment. It is further noted that the Clean Fuels Fund's primary focus remains on-road vehicles and fuels, and funds for off-road and stationary sources are limited.

This approach has been reviewed with the Clean Fuels and Technology Advancement Advisory Groups, as well as the Governing Board.

Technologies & Proposed Solutions	Environment & Health			Technology Maturity & Compatibility				Cost	
	Emissions Reduction	GHG/Petroleum Reduction	Health Benefits	Infrastructure Constructability	Technology Readiness	Near-Term Implementation/ Duty Cycle Fulfillment Capability	Operations Compatibility	Relative Cost & Economic Sustainability	Incentives Available
Electric/Hybrid Technologies & Infrastructure									
Plug-In Hybrid Heavy-Duty Trucks with Zero-Emission Range	◓	○	◓	●	○	◓	◓	◒	●
Heavy-Duty Zero-Emission Trucks	●	◓	●	◓	○	◒	○	●	●
Medium-Duty Trucks	◓	◓	●	◓	○	○	◒	◒	●
Medium- and Heavy-Duty Buses	●	◓	●	◓	○	◒	○	◒	◒
Light-Duty Vehicles	◓	◓	●	◓	◓	◓	◓	○	◒
Infrastructure	-	-	-	◓	◓	◓	◓	◒	●
Hydrogen & Fuel Cell Technologies & Infrastructure									
Heavy-Duty Trucks	●	◓	◓	○		○	◒	●	●
Heavy-Duty Buses	●	◓	◓	○		◓	◓	●	●
Off-road – Locomotive/Marine	●	◓	◓	○	◒	◒	◒	●	●
Light-Duty Vehicles	●	◓	◓	○	◓	○	○	◒	◒
Infrastructure – Production, Dispensing, Certification	-	-	-	○	○	◒	◒	●	◒
Engine Systems									
Ultra-Low emissions Heavy-Duty Engines	◓	◓	◓	●	○	○	●	◓	○
Alternative Fuel Medium- and Heavy-Duty Vehicles	◓	◓	◓	●	◓	◓	●	◓	○
Off-Road Applications	◓	◓	◓	●	◓	◓	●	◓	○
Fueling Infrastructure & Deployment									
Production of Renewable Natural Gas – Biowaste/Feedstock	◓	●	◓	●	◓	◓	◓	◒	◒
Synthesis Gas to Renewable Natural Gas	◓	●	◓	●	◓	◓	◓	○	○
Expansion of Infrastructure/Stations/Equipment/RNG Transition	◓	◓	◓	●	◓	◓	◓	◓	○
Stationary Clean Fuel Technologies									
Low-Emission Stationary & Control Technologies	◓	◓	◓	◓	○	○	◓	○	◒
Renewable Fuels for Stationary Technologies	○	●	◓	◓	○	○	○	○	◒
Vehicle-to-Grid or Vehicle-to-Building/Storage	●	●	◓	○	○	◒	○	◒	◒
Emission Control Technologies									
Alternative/Renewable Liquid Fuels	○	◓	◓	◓		●	●	◓	○
Advanced Aftertreatment Technologies	◓	○	◓	○	○	◓		◓	○
Lower-Emitting Lubricant Technologies	○	○	●	-	◓	◓	◓	●	○

● Excellent ◓ Good ○ Satisfactory ◒ Poor ● Unacceptable

Appendix E

List of Acronyms

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LIST OF ACRONYMS

AB—Assembly Bill
AC—absorption chiller
ADA—American with Disabilities Act
AER—all-electric range
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
BEB—battery electric bus
BET—battery electric truck
BEV—battery electric vehicle
BSNOx—brake specific NOx
BMEP – brake mean effective pressure
BMS—battery management system
CAAP—Clean Air Action Plan
CAFR—Comprehensive Annual Financial Report
CaFCP—California Fuel Cell Partnership
CARB—California Air Resources Board
CATI—Clean Air Technology Initiative
CBD—Central Business District (cycle) - a Dyno test cycle for buses
CCF—California Clean Fuels
CCHP—combined cooling, heat and power
CCV—closed crankcase ventilation
CDA—cylinder deactivation
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
CEQA—The California Environmental Quality Act
CFCI—Clean Fuel Connection, Inc.
CFD—computational fluid dynamic
CHBC—California Hydrogen Business Council
CHE—cargo handling equipment
CMAQ—community multi-scale air quality
CNG—compressed natural gas
CNGVP—California Natural Gas Vehicle Partnership
CO_2—carbon dioxide
CO—carbon monoxide
ComZEV—Commercial Zero-Emission Vehicle
CPA—Certified Public Accountant
CPUC—California Public Utilities Commission
CRDS—cavity ring-down spectroscopy
CRT—continuously regenerating technology
CSC—city suburban cycle
CVAG—Coachella Valley Association of Governments
CWI—Cummins Westport, Inc.
CY—calendar year
DC—direct connection
DCFC—direct connection fast charger
DCM—dichloromethane
DEF—diesel exhaust fluid
DEG—diesel equivalent gallons
DGE—diesel gallon equivalents
DF—deterioration factor
DME—dimethyl ether
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
DPT3—Local Drayage Port Truck (cycle) - where 3=local (whereas 2=near-dock, etc.)
DRC—Desert Resource Center
DRI—Desert Research Institute
ECM—emission control monitoring
EDD—electric drayage demonstration
EDTA—Electric Drive Transportation Association
EGR—exhaust gas recirculation
EIA—Energy Information Administration
EIN—Energy Independence Now
EMFAC—Emission FACtors
EPRI—Electric Power Research Institute
E-rEV—extended-range electric vehicles
ESD—emergency shut down
ESS—energy storage system
EV—electric vehicle
EVSE—electric vehicle supply equipment
FCEB – fuel cell electric bus
FCV—fuel cell vehicle
FTA—Federal Transit Administration
FTP—federal test procedures
G2V—grid-to-vehicle
g/bhp-hr—grams per brake horsepower per hour
GC/MS—gas chromatography/mass spectrometry
GCW—gross combination weight
GCVW—gross container vehicle weight
GDI—gasoline direct injection

LIST OF ACRONYMS (cont'd)

GGE—gasoline gallon equivalents
GGRF—Greenhouse Gas Reduction Relief Fund
GHG—greenhouse gas
GNA—Gladstein, Neandross & Associates, LLC
GPU—gas processing unit
GREET- Greenhouse Gasses, Regulated Emissions and Energy Use in Transportation
GTL—gas to liquid
GVWR—gross vehicle weight rating
H&SC—California Health and Safety Code
HCCI—Homogeneous Charge Combustion Ignition
HCNG—hydrogen-compressed natural gas (blend)
HD – heavy duty
HDDT—highway dynamometer driving schedule
HD-FTP—Heavy-Duty Federal Test Procedure
HD-OBD—heavy-duty on-board diagnostics
HHDDT—heavy heavy-duty diesel truck schedule
HPLC—high-performance liquid chromatography
HRSC – heat recovery steam cycle
HT—high throughput
HTFCs—high-temperature fuel cells
H2NIP—Hydrogen Network Investment Plan
HTPH—high throughput pretreatment and enzymatic hydrolysis
HyPPO—Hydrogen Progress, Priorities and Opportunities report
Hz—Hertz
ICE—internal combustion engine
ICEV—internal combustion engine vehicle
ICU—inverter-charger unit
ICTC—Interstate Clean Transportation Corridor
IVOC—intermediate volatility organic compound
kg—kilogram
LACMTA—Los Angeles County Metropolitan Transit Authority
LADOT—City of Los Angeles Dept. of Transportation
LADWP—Los Angeles Department of Water and Power
LCA—life cycle assessment
LCFS—Low Carbon Fuel Standard
Li—lithium ion
LIMS—Laboratory Information Management System
LLC—low load cycly
LLNL—Lawrence Livermore National Laboratory
LNG—liquefied natural gas
LO-SCR— light-off selective catalytic reduction
LPG—liquefied petroleum gas or propane
LSM—linear synchronous motor
LSV—low-speed vehicle
LUV—local-use vehicle
LVP—low vapor pressure
MATES—Multiple Air Toxics Exposure Study
MCE—multi cylinder engine
MCFC—molten carbonate fuel cells
MD—medium duty
MECA—Manufacturers of Emission Controls Association
MOA—Memorandum of Agreement
MOVES—Motor Vehicle Emission Simulator
MPa—MegaPascal
MPFI—Multi-Port Fuel Injection
MPG—miles per gallon
MPGde—miles per gallon diesel equivalent
MSRC—Mobile Source Air Pollution Reduction Review Committee
MSW—municipal solid wastes
MY—model year
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
NG/NGV—natural gas/natural gas vehicle
NH3—ammonia
NHTSA—Natural Highway Traffic Safety Administration
NMHC—non-methane hydrocarbon
NO—nitrogen monoxide
NO_2—nitrogen dioxide
$NO + NO_2$—nitrous oxide
NOPA—Notice of Proposed Award
NOx—oxides of nitrogen
NRC—National Research Council
NREL—National Renewables Energy Laboratory
NSPS—new source performance standard
NSR—new source review
NZ—near zero
OBD—on-board diagnostics
OCS—overhead catenary system
OCTA—Orange County Transit Authority
OEHHA—Office of Environmental Health Hazard Assessment
OEM—original equipment manufacturer
One-off—industry term for prototype or concept vehicle
PAH—polyaromatic hydrocarbons

Back to Agenda

BOARD MEETING DATE: March 5, 2021 AGENDA NO. 33

PROPOSAL: Approve Annual RECLAIM Audit Report for 2019 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-sixth year of this program. Recent trends in trading future year RTCs are analyzed and presented in this report. A list of facilities that did not reconcile their emissions for the 2019 Compliance Year is also included in the report. This action is to approve the Annual RECLAIM Audit Report for 2019.

COMMITTEE: Stationary Source Committee, February 19, 2021, Reviewed

RECOMMENDED ACTION:
Approve the Annual RECLAIM Audit Report for 2019 Compliance Year.

Wayne Nastri
Executive Officer

AD:DO

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 South Coast AQMD'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 and annual 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.

Although the NOx RECLAIM program is transitioning to a command-and-control regulatory structure, RECLAIM Rule 2015 - Backstop Provisions, requires that staff conduct annual program audits to assess various aspects of the program and to verify that program objectives are met. Staff has completed audits of facility records and completed the annual audit of the RECLAIM program for Compliance Year 2019 (which encompasses the time period for Cycle 1 from January 1, 2019 to December 31, 2019 and for Cycle 2 from July 1, 2019 to June 30, 2020). Based on audited emissions in this report and previous annual reports, staff has determined that RECLAIM met its emissions goals for Compliance Year 2019, 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 percent) primarily due to emissions from electric generating facilities during the California energy crisis. For Compliance Year 2019, audited NOx emissions were 20 percent less than programmatic NOx allocations and audited SOx emissions were 23 percent less than programmatic SOx allocations.

Audit Findings

The audit of the RECLAIM Program's Compliance Year 2019 and trades of RTCs that occurred during calendar year 2020 show:

- ***Overall Compliance*** – Audited NOx and SOx emissions from RECLAIM facilities were significantly below programmatic allocations.

- ***Universe*** – The RECLAIM universe consisted of 253 facilities as of June 30, 2019. No new facilities were included, no facilities were excluded, and seven facilities in the RECLAIM universe shut down during Compliance Year 2019. Thus, 246 active facilities were in the RECLAIM universe on June 30, 2020, the end of Compliance Year 2019.

  Of the seven facilities that shut down, three facilities cited financial reasons, one facility relocated outside the South Coast AQMD, two facilities sold to new owners and removed their equipment, and one facility underwent a corporate merger and consolidation. All seven facilities permanently ceasing operations were in NOx RECLAIM.

- ***Facility Compliance*** – The vast majority of RECLAIM facilities complied with their allocations during the 2019 compliance year (95 percent of NOx facilities and 97 percent of SOx facilities). Thirteen facilities (five percent of total facilities) exceeded their allocations (12 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocations) during Compliance Year 2019. The 12 facilities that exceeded their NOx allocations had total NOx emissions of 339.9 tons and did not have adequate allocations to offset 213.6 of those tons. The exceedances represent 2.60 percent of total RECLAIM NOx universe allocations and 62.8 percent of total NOx emissions from the 12 facilities. The one SOx facility that exceeded its SOx allocation had total SOx emissions of 1.22 tons and did not have adequate allocations to offset 0.27 tons. This exceedance represents 0.01 percent of total RECLAIM SOx universe allocations and 22.1 percent of total SOx emissions from the facility. Pursuant to Rule 2010(b)(1)(A), all 13 facilities had their respective exceedances deducted from their annual allocations for the compliance year subsequent to South Coast AQMD staff determination that the facilities exceeded their Compliance Year 2019 allocations.

- ***Job Impacts*** – Based on a survey of RECLAIM facilities, the RECLAIM program had minimal impact on employment during the 2019 compliance year, which is consistent with previous years. RECLAIM facilities reported an overall net loss of 4,167 jobs, representing 4.0 percent of their total employment. A comparison of reported job impacts between Cycle 1 and Cycle 2 facilities suggests that the coronavirus (COVID-19) global pandemic affected Cycle 2 facility job losses. One facility cited RECLAIM as a factor contributing to the addition of one job during Compliance Year 2019. No RECLAIM facility reported job losses due to RECLAIM during Compliance Year 2019. The job loss and job gain data are compiled strictly from reports submitted by RECLAIM facilities, and staff is not able to verify the accuracy of the reported job impacts data.

- ***Trading Activity*** – The RTC trading market activity during calendar year 2020 was slightly lower in terms of number of trades (1.3 percent), lower with respect to total value (46.9 percent), slightly lower in volume for discrete-year RTCs (9.4 percent) and lower in volume of infinite-year block (IYB) RTCs excluding swaps (69.6 percent), when compared to calendar year 2019. A total of $1.54 billion in RTCs has been traded since the adoption of RECLAIM, of which $18.2 million occurred in calendar year 2020 (compared to $34.2 million in calendar year 2019), excluding swaps.

  The annual average prices of discrete-year NOx and SOx RTCs for Compliance Years 2019, 2020, and 2021 and IYB NOx and SOx RTCs traded in calendar year 2020 were below the applicable review thresholds for average RTC prices. The annual average prices of RTCs traded during calendar years 2019 and 2020 are summarized and compared to the applicable thresholds in Tables 1 and 2.

Table 1 – Average Prices for Discrete-Year RTCs Traded during Calendar Years 2019 and 2020

	Average Price ($/ton)				Review Thresholds ($/ton)	
Year Traded	**2018 NOx RTC**	**2019 NOx RTC**	**2020 NOx RTC**	**2021 NOx RTC**	**Rule 2015 (b)(6)**	**Health and Safety Code §39616(f)**
2019	$2,261	$5,410	$12,190	$8,678	$15,000	$47,585
2020		$4,287	$8,323	$9,418		
Year Traded	**2018 SOx RTC**	**2019 SOx RTC**	**2020 SOx RTC**	**2021 SOx RTC**	**Rule 2015 (b)(6)**	**Health and Safety Code §39616(f)**
2019	$1,764	$7,985	None traded	None traded	$15,000	$34,261
2020		$4,387	$2,300	None traded		

Table 2 – Average Prices for IYB RTCs Traded during Calendar Years 2019 and 2020

	Average Price ($/ton)		Review Threshold ($/ton)
RTCs	Traded in 2019	Traded in 2020	**[Health and Safety Code §39616(f)]**
NOx	$94,183	$116,405	$713,777
SOx	$13,213	$32,251	$513,919

- ***Role of Investors*** – Investors remained active in the RTC market, and their involvement in 2020 was comparable to prior years. Investors were involved in 151 of the 189 discrete NOx trades with price, and 4 of the 5 discrete SOx trades with price. With respect to IYB trades, investors' participation was notable, and were involved in 10 of the 18 IYB NOx trades with price, and both of the IYB SOx trades with price. Compared to calendar year 2019, investor holdings of total IYB NOx RTCs remained the same at 1.3 percent and decreased from 4.7 percent to 4.2 percent for IYB SOx RTCs at the end of calendar year 2020. Investors purchase RTCs, but are not RECLAIM facilities or brokers. (Brokers typically do not purchase RTCs but facilitate trades.)

- ***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.

Attachments

1. Annual RECLAIM Audit Report for 2019 Compliance Year
2. Board Presentation

ATTACHMENT 1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for 2019 Compliance Year

March 5, 2021

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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Speaker of the Assembly
Appointee

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EXECUTIVE OFFICER

Wayne Nastri

TABLE OF CONTENTS

Tables

Appendices

LIST OF ABBREVIATIONS

AAQS	Ambient Air Quality Standards
ACEMS	Alternative Continuous Emissions Monitoring System(s)
AER	Annual Emission Report
APEP	Annual Permit Emissions Program
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BARCT	Best Available Retrofit Control Technology
CAA	Clean Air Act
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEMS	Continuous Emissions Monitoring System(s)
CEQA	California Environmental Quality Act
CGA	Cylinder Gas Audit
COVID-19	Coronavirus Disease 2019
CPMS	Continuous Process Monitoring System(s)
EDR	Electronic Data Reporting
ERC	Emission Reduction Credit
GHG	Greenhouse Gas
IYB RTC	Infinite-Year Block RECLAIM Trading Credit
LAER	Lowest Achievable Emission Rate
LAP	Laboratory Approval Program
MDP	Missing Data Procedures
MRR	Monitoring, Reporting and Recordkeeping
MSERC	Mobile Source Emission Reduction Credit
NAAQS	National Ambient Air Quality Standards
NNI	No Net Increase
NOx	Oxides of Nitrogen
NSR	New Source Review
ODC	Ozone Depleting Compound
OEHHA	Office of Environmental Health Hazard Assessment
QCER	Quarterly Certification of Emissions Report
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audit
RECLAIM	REgional CLean Air Incentives Market
RTC	RECLAIM Trading Credit
RTU	Remote Terminal Unit
SIP	State Implementation Plan
SOx	Oxides of Sulfur
TAC	Toxic Air Contaminant
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WATERS	Web Access To Electronic Reporting System

EXECUTIVE SUMMARY

Introduction

The South Coast Air Quality Management District (South Coast AQMD) 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 2019 (January 1 through December 31, 2019 for Cycle 1 and July 1, 2019 through June 30, 2020 for Cycle 2 facilities). This annual audit report covers activities for the twenty-sixth 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, 2019, the overall changes in RECLAIM participants were 134 facilities included into the program, 73 facilities excluded from the program, and 202 facilities ceased operation. Thus, the RECLAIM universe consisted of 253 active facilities at the end of Compliance Year 2018 (December 31, 2018 for Cycle 1 facilities and June 30, 2019 for Cycle 2 facilities). During Compliance Year 2019 (January 1, 2019 through December 31, 2019 for Cycle 1 facilities and July 1, 2019 through June 30, 2020 for Cycle 2 facilities), no facilities were included into the RECLAIM universe, no facilities were excluded, and seven facilities (all in the NOx universe) shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of seven facilities in the universe, bringing the total number of active RECLAIM facilities to 246 as of the end of Compliance Year 2019.

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 resulted in an overall reduction of 48.4% (or 5.7 tons/day) in SOx allocations. On December 4, 2015, the Governing Board adopted amendments to NOx

RECLAIM to phase in additional NOx reductions which began in Compliance Year 2016 and continue through Compliance Year 2022. The amendments will result in an overall NOx reduction of 45% (or 12 tons/day) when fully implemented for Compliance Year 2022 and beyond. For Compliance Year 2019, the fourth year of implementation, the NOx allocation supply was reduced by 15.1 % (or 4.0 tons/day). The only remaining changes in RTC supply during Compliance Year 2019 were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12) which increased overall NOx RTC supply by 13.2 tons and SOx RTC supply by 2.6 tons.

Since the inception of the RECLAIM program in 1994, a total value of $1.54 billion dollars has been traded in the RTC trading market, excluding swap trades. During calendar year 2020, there were 300 RTC trade registrations, including swap trades. There were 277 RTC trade registrations with a total value of $18.2 million traded, excluding swap trades. RTC trades are reported to South Coast AQMD as either discrete-year RTC trades or infinite-year block (IYB) trades (trades that involve blocks of RTCs with a specified start year and continuing into perpetuity).

Excluding swap trades, in calendar year 2020 a total of 1,854 tons of discrete-year NOx RTCs, 377 tons of discrete-year SOx RTCs, 156 tons of IYB NOx RTCs and 20 tons of IYB SOx RTCs were traded. The RTC trading market activity decreased during calendar year 2020 compared to calendar year 2019, in number of trades (by 1.3%), in total value (by 46.9%),and in volume both for discrete-year RTCs (by 9.4%) and IYB RTCs (by 69.6%).

Discrete-year RTC trades with price (*i.e.*, price >$0.00) registered during calendar year 2020 include trades for Compliance Years 2019, 2020, and 2021 NOx RTCs, and Compliance Years 2019 and 2020 SOx RTCs, excluding swap trades. The annual average prices of discrete-year NOx RTCs traded during calendar year 2020 were $4,287, $8,323, and $9,418 per ton for Compliance Years 2019, 2020, and 2021 RTCs, respectively. The annual average prices for discrete-year SOx RTCs traded during the same period were $4,387, and $2,300 per ton for Compliance Years 2019 and 2020 RTCs, respectively.

Prices for discrete-year NOx and SOx RTCs for all compliance years are still well below the $47,585 per ton of NOx and $34,261 per ton of SOx discrete-year RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f), as well as the $15,000 per ton threshold pursuant to Rule 2015(b)(6).

The annual average price during calendar year 2020 for IYB NOx RTCs was $116,405 per ton and the annual average price for IYB SOx RTCs was $32,251 per ton. Therefore, annual average IYB RTC prices did not exceed the $713,777 per ton of IYB NOx RTCs or the $513,919 per ton of IYB SOx RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f). IYB NOx RTC trade activities were concentrated towards the first half of calendar year 2020, during which petroleum refining companies acquired from investors 74 tons of IYB NOx RTCs.

Investors were active in the RTC market during calendar year 2020. They were involved in 151 of the 189 discrete-year NOx trade registrations and 4 of the 5 discrete-year SOx trade registrations with price. Investors were also involved in

10 of the 18 IYB NOx and both of the IYB SOx trades with price. Investors were involved in 72% of total value and 66% of total volume for discrete-year NOx trades, and 62% of the total value and 71% of the total volume for discrete-year SOx trades. At the end of calendar year 2020, investors' holdings of IYB NOx RTCs stayed consistent at 1.3% of total NOx RECLAIM RTCs, while investors' holdings of IYB SOx RTCs decreased slightly to 4.2% of the total SOx RECLAIM RTCs, compared to investor's holdings of 4.7% in calendar year 2019.

Chapter 3: Emission Reductions Achieved

For Compliance Year 2019, aggregate NOx emissions were below total allocations by 20% 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 2019. 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 2019. With respect to the Rule 2015 backstop provisions, Compliance Year 2019 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 2019, a total of three NOx RECLAIM facilities had NSR NOx emission increases, and no SOx RECLAIM facilities had an NSR SOx emission increase 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 2019, RECLAIM demonstrated federal equivalency with a programmatic NOx offset ratio of 1,504-to-1 based on the compliance year's total unused allocations and total NSR emission increases for NOx. There were no SOx NSR emission increases that resulted from starting operations of new or modified permitted sources during the compliance year. 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 (Table 3-2 and Figure 3-2), there was a surplus of SOx RTCs during Compliance Year 2019. Therefore, RECLAIM more than complied with the federally-required SOx offset ratio and further quantification of the SOx offset ratio is unnecessary. Also, the NNI is satisfied by the program's 1-to1 offset ratio. 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) for major sources. The same

BACT guidelines are used to determine BACT applicable to RECLAIM and non-RECLAIM facilities.

Chapter 5: Compliance

Based on South Coast AQMD Compliance Year 2019 audit results, 247 of the 259 (95%) NOx RECLAIM facilities complied with their NOx allocations, and 31 of the 32 SOx facilities (97%) complied with their SOx allocations based on South Coast AQMD audit results. So, thirteen facilities exceeded their allocations (12 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocation). The 12 facilities that exceeded their NOx allocations had aggregate NOx emissions of 339.9 tons and did not have adequate allocations to offset 213.6 tons (or 62.8%) of their combined emissions. The facility that exceeded its SOx allocations had total SOx emissions of 1.22 tons and did not have adequate allocations to offset 0.27 tons (or 22.1%). The NOx and SOx exceedance amounts are relatively small compared to the overall NOx and SOx allocations for Compliance Year 2019 (2.60% of total NOx allocations and 0.01% of total SOx allocations). The exceedances from these facilities did not impact the overall RECLAIM emission reduction goals. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2019 (*i.e.*, aggregate emissions for all RECLAIM facilities were well below aggregate allocations). 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 South Coast AQMD's determination that the facilities exceeded their Compliance Year 2019 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. South Coast AQMD staff is not able to independently verify the accuracy of the facility reported job impact information.

According to the Compliance Year 2019 employment survey data gathered from APEP reports, RECLAIM facilities reported a net loss of 4,167 jobs, representing 4.0% of their total employment. A comparison of reported job impacts between Cycle 1 and Cycle 2 facilities suggests that the coronavirus (COVID-19) global pandemic affected Cycle 2 facility job losses. One RECLAIM facility cited RECLAIM as a factor contributing to the addition of one job during Compliance Year 2019. No facility reported job losses due to RECLAIM, during Compliance Year 2019.

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 2019 NOx and SOx emissions decreased

2.1% and 20.3%, respectively, relative to Compliance Year 2018. Quarterly calendar year 2019 NOx emissions fluctuated within five percent of the mean NOx emissions for the year. Quarterly calendar year 2019 SOx emissions fluctuated within fifteen 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 2020, 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 South Coast AQMD. Those emissions reports are used to identify candidates for the Air 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, than would occur under command-and-control, because RECLAIM facilities must comply with the same toxics rules as non-RECLAIM facilities.

INTRODUCTION

The South Coast Air Quality Management District (South Coast AQMD) 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-and-control 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. South Coast AQMD staff has completed the initial tri-annual program audit and each individual annual program audit report through the 2019 Compliance Year Audit.

This report presents the annual program audit and progress report of RECLAIM's twenty-sixth compliance year (January 1 through December 31, 2019 for Cycle 1 and July 1, 2019 through June 30, 2020 for Cycle 2 RECLAIM facilities), also known as Compliance Year 2019. 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 summarizes changes to the universe of RECLAIM sources that occurred up until July 1, 2019 (covered under the Annual RECLAIM Audit Report for 2018 Compliance Year), then discusses changes to the RECLAIM universe of sources in detail through the end of Compliance Year 2019.

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 South Coast AQMD'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, 2019, the overall changes in RECLAIM participants were 134 facilities included into the program, 73 facilities excluded from the program, and 202 facilities ceased operation. Thus, the RECLAIM universe consisted of 253 active facilities at the end of Compliance Year 2018 (December 31, 2018 for Cycle 1 facilities and June 30, 2019 for Cycle 2 facilities). During Compliance Year 2019 (January 1, 2019 through December 31, 2019 for Cycle 1 facilities and July 1, 2019 through June 30, 2020 for Cycle 2 facilities), no facilities were included into the RECLAIM universe, no facilities were excluded, and seven facilities (all in the NOx universe) shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of seven facilities in the universe, bringing the total number of active RECLAIM facilities to 246 as of the end of Compliance Year 2019.

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 were 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 were not automatically included but did 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; publicly-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 was not in a category specifically excluded from the program could voluntarily join RECLAIM regardless of its emission level. Additionally, a facility could be required to enter the RECLAIM universe if:

- It increased its NOx and/or SOx emissions from permitted sources above the four ton per year threshold; or
- It ceased to be categorically excluded and its reported NOx and/or SOx emissions were greater than or equal to four tons per year; or
- It was determined by 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 was 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).

2016 AQMP Control Measure CMB-05

Up until March 2017, staff conducted a process of identifying facilities to be included in RECLAIM pursuant to Rule 2001(b) – Criteria for Inclusion in RECLAIM. As part of the adoption Resolution of the Final 2016 AQMP in March 2017, staff was directed by the Governing Board to modify Control Measure CMB-05 – Further NOx Reductions from RECLAIM Assessment to achieve an additional five tons per day NOx emission reductions as soon as feasible but no later than 2025, and to transition the RECLAIM program to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT) level controls as soon as practicable. Additionally, California State Assembly Bill (AB) 617, approved in July 2017, required an expedited schedule for implementing BARCT at cap-and-trade facilities, under which many RECLAIM facilities are also subject, and required that the implementation of BARCT be no later than December 31, 2023.

2018 Rule Amendments

On January 5, 2018, the Governing Board amended two rules, Rule 2001 – Applicability, and Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), to initiate the transition of the NOx and SOx RECLAIM program to a command-and-control regulatory structure as soon as practicable. The amendments also precluded new or existing facilities from entering the NOx and SOx RECLAIM programs. On October 5, 2018, the Governing Board further amended Rule 2001, opening a pathway for a facility to opt out of the RECLAIM program should their equipment qualify. Shortly thereafter, the United States Environmental Protection Agency (USEPA) recommended that facilities be kept in RECLAIM until all the rules associated with the transition to a command-and-control regulatory structure are adopted, so that the full transitioning of the

RECLAIM Program can be evaluated for incorporation into the State Implementation Plan (SIP) as a package with all the accompanying rules in place. In order to address USEPA's concerns, the Governing Board amended Rule 2001 on July 12, 2019 to remove the opt-out provision so that facilities cannot exit RECLAIM (see further discussion in Chapter 3).

Following approval of these Rule 2001 amendments, the only allowable changes to the RECLAIM Universe result from facilities that cease operations, as indicated by removing all equipment requiring a South Coast AQMD permit to operate, or by rendering such equipment permanently inoperable (*i.e.,* from facility shutdowns).

Universe Changes

In the early years of the RECLAIM program, some 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, some facilities that were not part of the original universe were subsequently added to the program based on the original inclusion criteria mentioned above. On the other hand, RECLAIM facilities that permanently go out of business are removed from the active emitting RECLAIM universe.

The overall changes to the RECLAIM universe from the date of adoption (October 15, 1993) through June 30, 2019 (the last day of Compliance Year 2018 for Cycle 2 facilities) were: the inclusion of 134 facilities (including 34 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 73 facilities, and the shutdown of 202 facilities. Thus, the net change in the RECLAIM universe from October 15, 1993 through June 30, 2018 was a decrease of 141 facilities from 394 to 253 facilities. In Compliance Year 2019 (January 1, 2019 through December 31, 2019 for Cycle 1 facilities and July 1, 2019 through June 30, 2020 for Cycle 2 facilities), no facilities were included, no facilities were excluded, and seven facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 246 facilities. The Compliance Year 2019 RECLAIM universe includes 216 NOx-only, no SOx-only, and 30 both NOx and SOx RECLAIM facilities. The list of active facilities in the RECLAIM universe as of the end of Compliance Year 2019 is provided in Appendix A.

Facility Inclusions and Exclusions

No RECLAIM facilities were included in or excluded from the RECLAIM universe during Compliance Year 2019.

Facilities Permanently Ceasing Operations

Seven NOx RECLAIM facilities permanently ceased operations in Compliance Year 2019. Three of these facilities shut down due to financial reasons. One facility relocated outside of the South Coast AQMD. Two facilities shut down when they sold to new owners and removed all equipment requiring a South Coast AQMD permit to operate. The last facility permanently ceased operations

as a result of a corporate merger and consolidation. Appendix C lists these facilities and provides brief descriptions of the reported reasons for their closures.

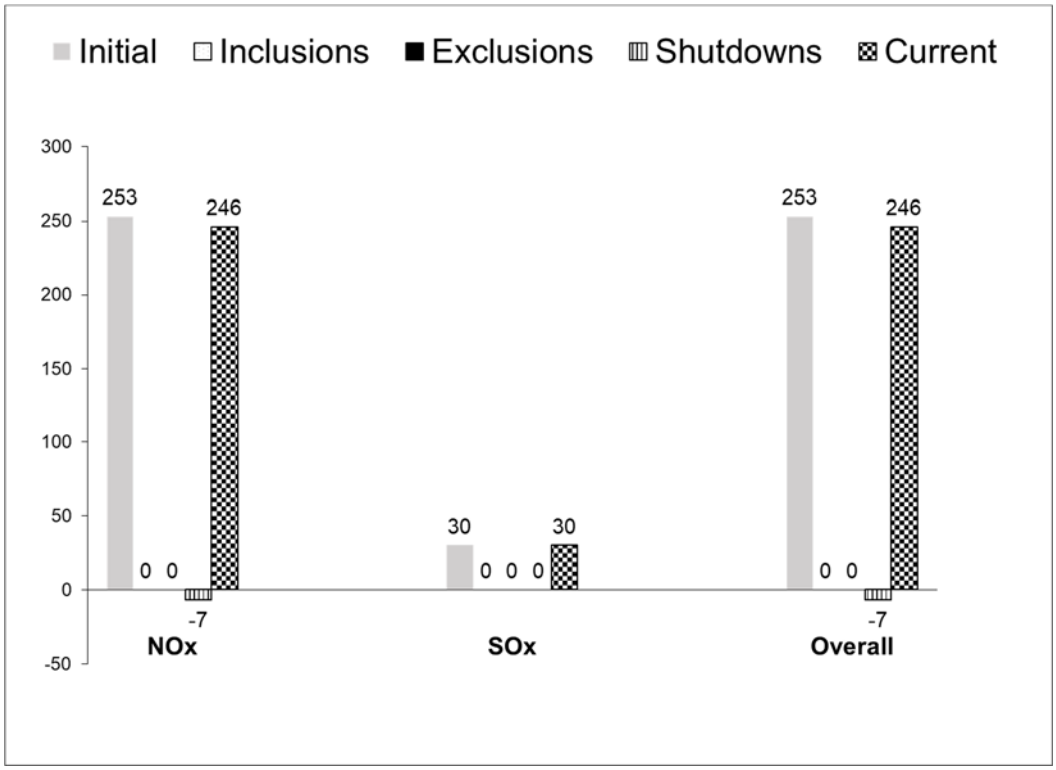
The above-mentioned changes to the RECLAIM universe resulted in a net decrease of seven facilities in the RECLAIM universe during Compliance Year 2019. Table 1-1 summarizes overall changes in the RECLAIM universe between the start of the program and end of Compliance Year 2019 (December 31, 2019 for Cycle 1 facilities and June 30, 2020 for Cycle 2 facilities). Changes to the RECLAIM universe that occurred in Compliance Year 2019 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 2018	134	13	134
Exclusions – October 15, 1993 through Compliance Year 2018	-72	-4	-73
Shutdowns – October 15, 1993 through Compliance Year 2018	-201	-20	-202
Universe – June 30, 2019	253	30	253
Inclusions – Compliance Year 2019	0	0	0
Exclusions – Compliance Year 2019	0	0	0
Shutdowns – Compliance Year 2019	-7	0	-7
Universe – End of Compliance Year 2019	246	30	246

* "Total Facilities" is not 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 2019



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 resulted in an overall reduction of 48.4% (or 5.7 tons/day) in SOx allocations. On December 4, 2015, the Governing Board adopted amendments to NOx RECLAIM to phase in additional NOx reductions which began in Compliance Year 2016 and continue through Compliance Year 2022. The amendments will result in an overall NOx reduction of 45% (or 12 tons/day) when fully implemented for Compliance Year 2022 and beyond. For Compliance Year 2019, the fourth year of implementation, the NOx allocation supply was reduced by 15.1 % (or 4.0 tons/day). The only remaining changes in RTC supply during Compliance Year 2019 were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12) which increased overall NOx RTC supply by 13.2 tons and SOx RTC supply by 2.6 tons.

Since the inception of the RECLAIM program in 1994, a total value of $1.54 billion dollars has been traded in the RTC trading market, excluding swap trades. During calendar year 2020, there were 300 RTC trade registrations, including swap trades. There were 277 RTC trade registrations with a total value of $18.2 million traded, excluding swap trades. RTC trades are reported to South Coast AQMD as either discrete-year RTC trades or infinite-year block (IYB) trades (trades that involve blocks of RTCs with a specified start year and continuing into perpetuity).

Excluding swap trades, in calendar year 2020 a total of 1,854 tons of discrete-year NOx RTCs, 377 tons of discrete-year SOx RTCs, 156 tons of IYB NOx RTCs and 20 tons of IYB SOx RTCs were traded. The RTC trading market activity decreased during calendar year 2020 compared to calendar year 2019, in number of trades (by 1.3%), in total value (by 46.9%),and in volume both for discrete-year RTCs (by 9.4%) and IYB RTCs (by 69.6%).

*Discrete-year RTC trades with price (*i.e.*, price >$0.00) registered during calendar year 2020 include trades for Compliance Years 2019, 2020, and 2021 NOx RTCs, and Compliance Years 2019 and 2020 SOx RTCs, excluding swap trades. The annual average prices of discrete-year NOx RTCs traded during calendar year 2020 were $4,287, $8,323, and $9,418 per ton for Compliance Years 2019, 2020, and 2021 RTCs, respectively. The annual average prices for discrete-year SOx RTCs traded during the same period were $4,387, and $2,300 per ton for Compliance Years 2019 and 2020 RTCs, respectively.*

Prices for discrete-year NOx and SOx RTCs for all compliance years are still well below the $47,585 per ton of NOx and $34,261 per ton of SOx discrete-year RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f), as well as the $15,000 per ton threshold pursuant to Rule 2015(b)(6).

The annual average price during calendar year 2020 for IYB NOx RTCs was $116,405 per ton and the annual average price for IYB SOx RTCs was $32,251 per ton. Therefore, annual average IYB RTC prices did not exceed the $713,777 per ton of IYB NOx RTCs or the $513,919 per ton of IYB SOx RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f). IYB NOx RTC trade activities were concentrated towards the first half of calendar year 2020, during which petroleum refining companies acquired from investors 74 tons of IYB NOx RTCs.

Investors were active in the RTC market during calendar year 2020. They were involved in 151 of the 189 discrete-year NOx trade registrations and 4 of the 5 discrete-year SOx trade registrations with price. Investors were also involved in 10 of the 18 IYB NOx and both of the IYB SOx trades with price. Investors were involved in 72% of total value and 66% of total volume for discrete-year NOx trades, and 62% of the total value and 71% of the total volume for discrete-year SOx trades. At the end of calendar year 2020, investors' holdings of IYB NOx RTCs stayed consistent at 1.3% of total NOx RECLAIM RTCs, while investors' holdings of IYB SOx RTCs decreased slightly to 4.2% of the total SOx RECLAIM RTCs, compared to investor's holdings of 4.7% in calendar year 2019.

Background

South Coast AQMD issues each RECLAIM facility at the time of inclusion into RECLAIM 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 that existed prior to January 1, 1993, the allocation is calculated based on each facility's historic production levels as reported to South Coast AQMD in its annual emission reports (AERs), NOx emission factors listed in Tables 1, 3, and 6 of Rule 2002 or SOx emission factors in Tables 2 and 4 of Rule 2002 for the appropriate equipment category, any qualified[1] external offsets previously provided by the facility, and any unused 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 sole 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

[1] Only external offsets provided at a one-to-one offset ratio after the base year were used as the basis for allocation quantification purposes.

needed RTCs through trade registrations (or a combination of the two), based on their operational needs.

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 2019 data, RTC trading and price data discussed in this chapter are for calendar year 2020.

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 RTCs allocated by South Coast AQMD, RTCs may have been 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 facilities[2], 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 South Coast AQMD Governing Board may adopt additional rules that affect RTC supply. Changes in the RTC supply during Compliance Year 2019 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.

[2] Per Rule 2002(c)(4), the window of opportunity for non-RECLAIM facilities to convert ERCs to RTCs other than during the process of a non-RECLAIM facility entering the program closed June 30, 1994.

As discussed in Chapter 1, the South Coast AQMD Governing Board amended Rule 2001 on October 5, 2018 to allow qualifying facilities to opt-out of the RECLAIM program. Based on continuing conversations with USEPA, the Governing Board subsequently amended Rule 2001 on July 12, 2019 to remove the opt-out provision so that facilities can no longer exit RECLAIM. Facilities that were excluded by means of this opt-out provision, as opposed to the normal exclusion criteria described in the preceding paragraph, retained their initially-allocated RTCs[3]. No facilities were excluded during Compliance Year 2019. Therefore, there were no changes to the NOx or SOx supplies in Compliance Year 2019 due to facility exclusions from RECLAIM.

On January 5, 2018, the South Coast AQMD Governing Board amended Rule 2001 – Applicability to discontinue facility inclusions into RECLAIM. The Executive Officer could only include a facility into RECLAIM up until January 5, 2018, and no facility can elect to enter RECLAIM after January 5, 2018. No facilities were included in the RECLAIM program in Compliance Year 2019. Therefore, there are no changes to the NOx or SOx RTC supplies in Compliance Year 2019 due to facility inclusions into RECLAIM.

Allocations Adjustments Due to Facility Shutdowns

Prior to an October 7, 2016 amendment of Rule 2002, shutdown facilities were allowed to retain all of their RTC holdings and participate in the trading market. For NOx RECLAIM facilities listed in Tables 7 and 8 that shut down on or after October 7, 2016, the Rule 2002 amendment established a BARCT-based RTC discounting methodology that is more closely aligned to the ERC discounting methodology under command-and-control rules. A shutdown facility may trade future year RTCs that remain after the RTC adjustment is completed, if any. If the calculated reduction amount exceeds a facility's holdings for any future compliance year, the facility must purchase and surrender sufficient RTCs to fulfill the entire reduction requirement. This situation may result if the facility previously sold its future year allocations.

Seven RECLAIM facilities shut down during Compliance Year 2019, none of which were listed in Tables 7 and 8 of Rule 2002. Therefore, there were no changes to the NOx RTC supplies in Compliance Year 2019 due to facility shutdowns. Most of these shutdown facilities sold their RTC credits.

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

[3] Except for shutdown facilities that are subject to Rule 2002(i); see discussion in the next section.

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 2019, 13.2 tons of NOx RTCs (0.16% of total NOx allocation for Compliance Year 2019) and 2.6 tons of SOx RTCs (0.12% of total SOx allocation for Compliance Year 2019) were added to refineries' Compliance Year 2019 RTC holdings at the end of the compliance year.

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 accordingly[4]. There were no changes in RTC allocations due to activity corrections in Compliance Year 2019.

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 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 2019.

Net Changes in RTC Supplies

The changes to RTC supplies described in the above sections resulted in a net increase of 13.2 tons of NOx RTCs (0.16% of the total) and an increase of 2.6 tons of SOx RTCs (0.12% of the total) for Compliance Year 2019. Table 2-1

[4] 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.

summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2019 pursuant to Rule 2002.

Table 2-1
Changes in NOx and SOx RTC Supplies during Compliance Year 2019 (tons/year)

Source	NOx	SOx
Universe changes	0	0
Clean Fuel/Reformulated Gasoline	13.2	2.6
Activity corrections	0	0
MSERCs	0	0
Net change	**13.2**	**2.6**

Note: The data in this table represents the changes that occurred over the course of Compliance Year 2019 to the Compliance Year 2019 aggregate NOx and SOx RTC supplies originally issued pursuant to Rule 2002, not the difference between 2019 aggregate RTC supply and that for any other compliance year.

Allocation Reduction Resulting from BARCT Review

Pursuant to California Health and Safety Code §40440, South Coast AQMD 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 CMB-10 – Additional NOx Reductions for RECLAIM (NOx) calling for additional NOx reductions from RECLAIM sources. South Coast AQMD 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, CARB, and 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.

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 were 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.

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 rulemaking 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 (45% reduction) when fully implemented in Compliance Year 2022. The reductions are being phased-in 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.

Figures 2-1 and 2-2 illustrate the total NOx and SOx RTC supplies, respectively, through the end of Compliance Year 2023, incorporating all the changes discussed above.

Figure 2-1
NOx RTC Supply

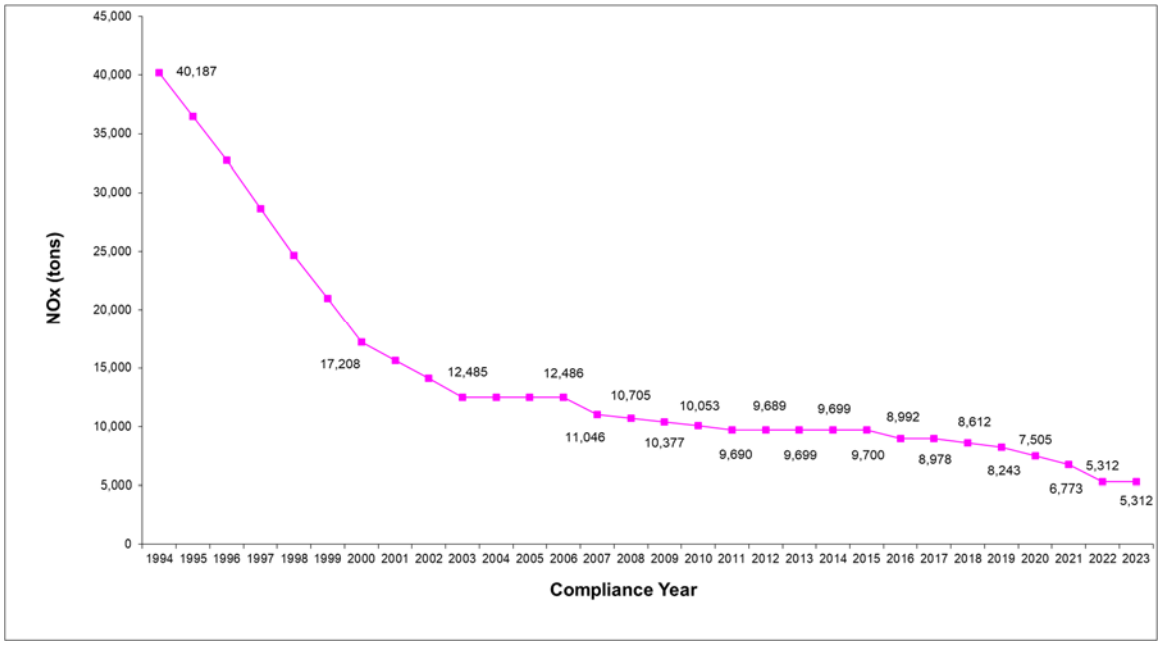
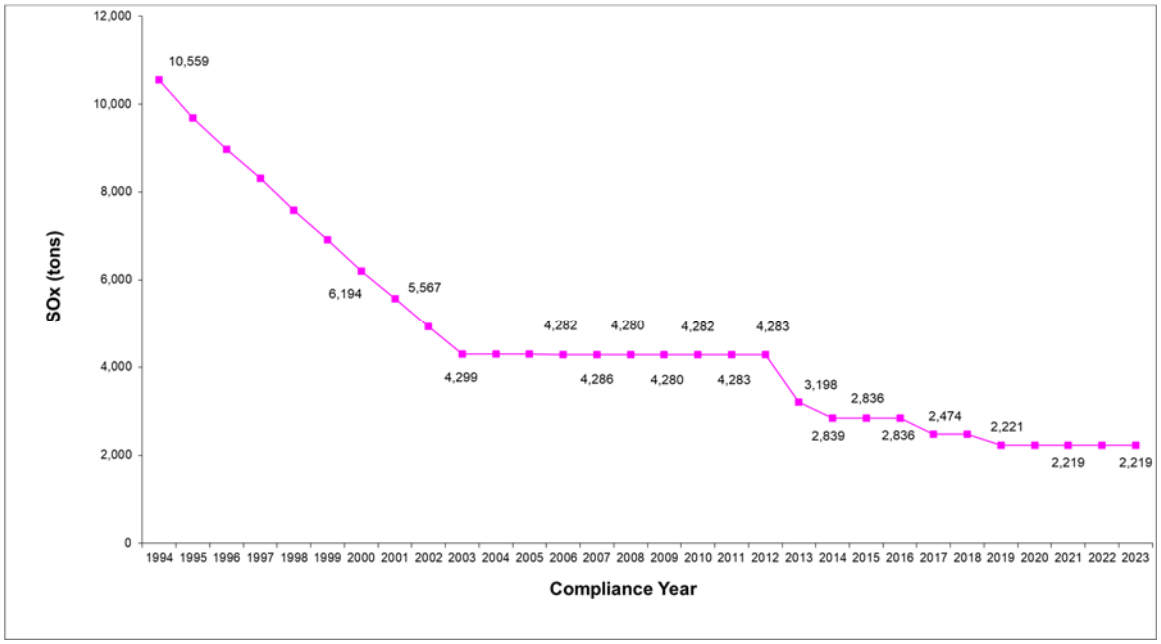


Figure 2-2
SOx RTC Supply



RTC Trades

RTC Price Reporting Methodology

RTC trades are reported to South Coast AQMD 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. Annual average prices for discrete-year RTCs are determined by averaging prices of RTCs for each compliance year, while the annual average prices for IYB RTCs are determined based on the amount of IYB RTCs (*i.e.,* the amount of RTCs in the infinite stream) regardless of the start year.

RTC Price Thresholds for Program Review

Rule 2015(b)(6) specifies that, if the annual average price of discrete-year 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)(R), if the annual average price of discrete-year SOx RTCs for any compliance year from 2017 through 2019 exceeds $50,000 per ton, the Governing Board has the discretion to convert facilities' Non-tradable/Non-usable RTCs to Tradable/Usable RTCs. Similarly, Rule 2002(f)(1)(H) specifies that in the event that the NOx RTC prices exceed $22,500 per ton (current compliance year credits) based on the 12-month rolling average, or exceed $35,000 per ton (current compliance year credits) based on the 3-month rolling average calculated pursuant to subparagraph (f)(1)(E), the Executive Officer will report the determination to the Governing Board. If the Governing Board finds that the 12-month rolling average RTC price exceeds $22,500 per ton or the 3-month rolling average RTC price exceeds $35,000 per ton, then the Non-tradable/Non-usable NOx RTCs, as specified in subparagraphs (f)(1)(B) and (f)(1)(C) valid for the period in which the RTC price is found to have exceeded the applicable threshold, shall be converted to Tradable/Usable NOx RTCs upon Governing Board concurrence. For RTC trades occurring in calendar year 2020, the overall program review thresholds[5] in 2020 dollars, pursuant to Health and Safety Code §39616(f), are $47,585 per ton of discrete-year NOx RTCs, $34,261 per ton of discrete-year SOx RTCs, $713,777 per ton of IYB NOx RTCs, and $513,919 per ton of IYB SOx RTCs.

RTC Trading Activity Excluding Swaps

Overall Trading Activity

RTC trades include discrete-year and IYB RTCs traded with prices, discrete-year and IYB RTC trades with zero price, and discrete-year and IYB RTC swap trades. The RTC market activity in calendar year 2020 was comparable to the market activity in calendar year 2019 in terms of the number of trades. Table 2-2 compares NOx and SOx trade registrations for calendar years 2020 and 2019.

Table 2-2
Trade Registrations in Calendar Years 2020 and 2019, Including Swaps

RTC	2020	2019
NOx	279	273
SOx	21	31
Total	300	304

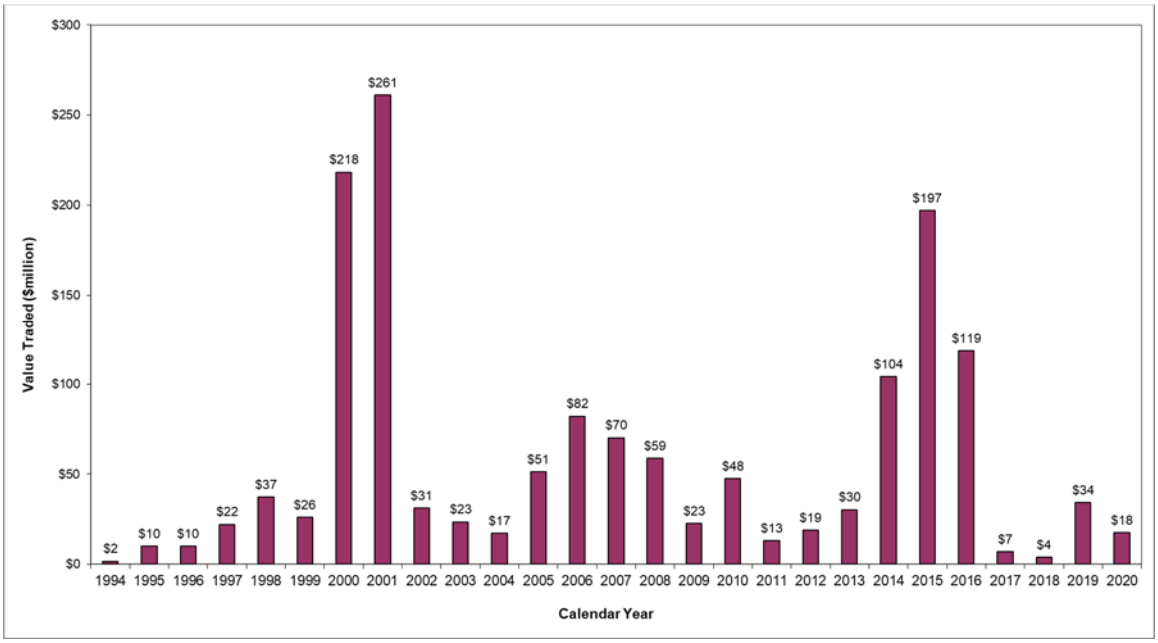
The $18.19 million traded in calendar year 2020 was significantly less compared to calendar year 2019, excluding swap trades. Table 2-3 compares the value of NOx and SOx RTCs traded in calendar years 2020 and 2019. Figure 2-3 illustrates the annual value of RTCs traded in RECLAIM since the inception of the program.

[5] These program review thresholds were adjusted using the October 2020 Consumer Price Index (CPI), due to the unavailability of the December 2020 CPI by the end of January 2021 when this report was compiled.

Table 2-3
Value Traded in Calendar Years 2020 and 2019, Excluding Swaps (millions of dollars)

RTC	2020	2019
NOx	$17.52	$32.33
SOx	$0.67	$1.91
Total	$18.19	$34.24

Figure 2-3
Annual Trading Values for NOx and SOx (Excluding Swaps)



With respect to total volume traded (excluding swap trades), trades of discrete-year RTCs were slightly higher for NOx but significantly lower for SOx in calendar year 2020 than in calendar year 2019, while trades of IYB RTCs in calendar year 2020 were significantly lower than the trading volume in 2019. Tables 2-4 and 2-5 compare 2020 and 2019 for NOx and SOx trade volume for discrete-year and IYB trades, respectively. Figure 2-4 summarizes overall trading activity (excluding swaps) in calendar year 2020 by pollutant. Additional information on the discrete-year and IYB trading activities, value, and volume are discussed later in this chapter.

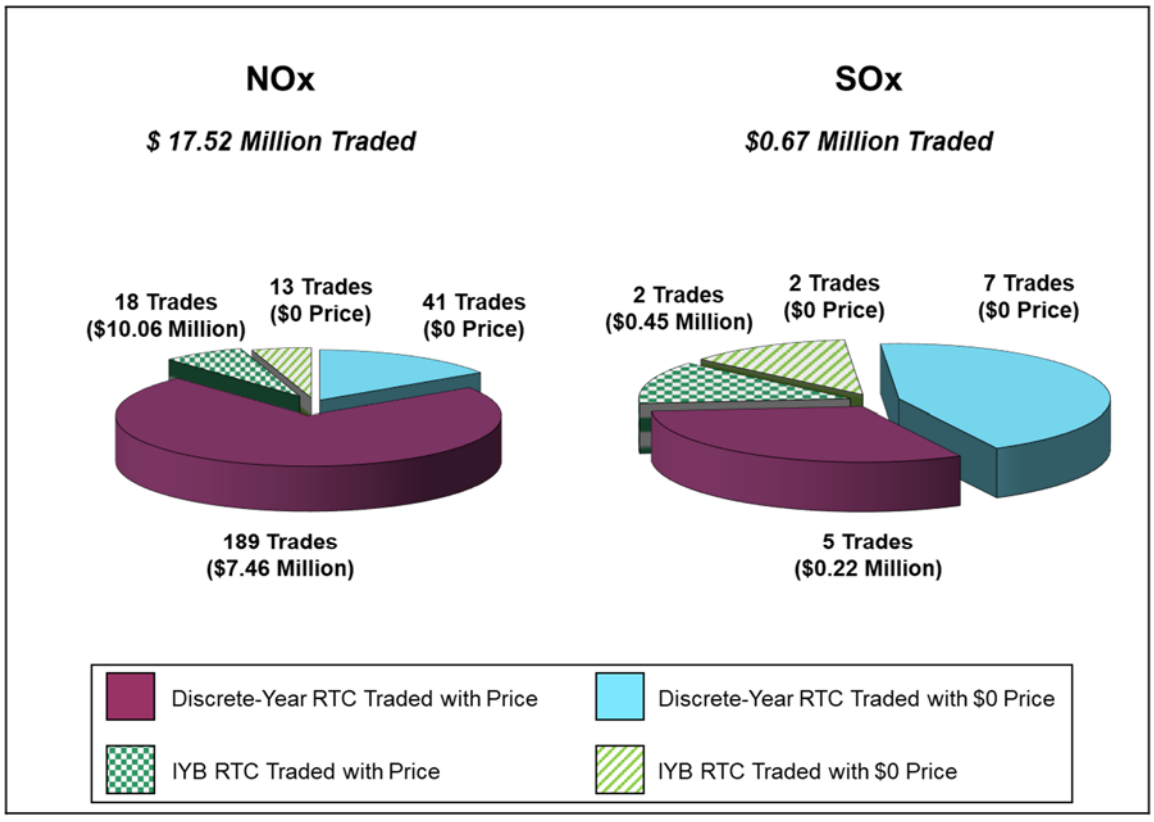
Table 2-4
Volume of Discrete-Year RTCs Traded in Calendar Years 2020 and 2019, Excluding Swaps (tons)

RTC	2020	2019
NOx	1,854	1,796
SOx	377	666
Total	2,231	2,462

Table 2-5
Volume of IYB RTCs Traded in Calendar Years 2020 and 2019, Excluding Swaps (tons)

RTC	2020	2019
NOx	156	526
SOx	20	55
Total	176	581

Figure 2-4
Calendar Year 2020 Overall Trading Activity (Excluding Swaps)



There were 63 trades with zero price in calendar year 2020. 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 2020, the majority of trades with zero price were transfers between facilities under common ownership and facilities that underwent a change of operator.

Discrete-Year RTC Trading Activity

In calendar year 2020, there were a total of 230 discrete-year NOx RTC trades and 12 discrete-year SOx RTC trades, excluding swap trades. The trading of discrete-year NOx RTCs included RTCs for Compliance Years 2019 through 2021 (see Table 2-14). The trading of discrete-year SOx RTCs included RTCs for Compliance Years 2019 and 2020 (see Table 2-15). Table 2-6 compares the number of trade registrations in 2020 and 2019, both with price and with zero price.

Table 2-6
Discrete-Year Trade Registrations in Calendar Years 2020 and 2019 by Price, Excluding Swaps

Year	RTC	With Price	With $0 Price	Total
2020	NOx	189	41	230
	SOx	5	7	12
	Total	194	48	242
2019	NOx	178	46	224
	SOx	17	7	24
	Total	195	53	248

Total discrete-year RTC trading values significantly increased for NOx and significantly decreased for SOx on a relative basis in calendar year 2020 when compared to calendar year 2019. Table 2-7 compares the total value of the discrete-year RTC trades in 2020 and 2019.

Table 2-7
Discrete-Year RTC Value Traded in 2020 and 2019, Excluding Swaps (millions of dollars)

RTC	2020	2019
NOx	$7.46	$4.23
SOx	$0.22	$1.19
Total	$7.68	$5.41

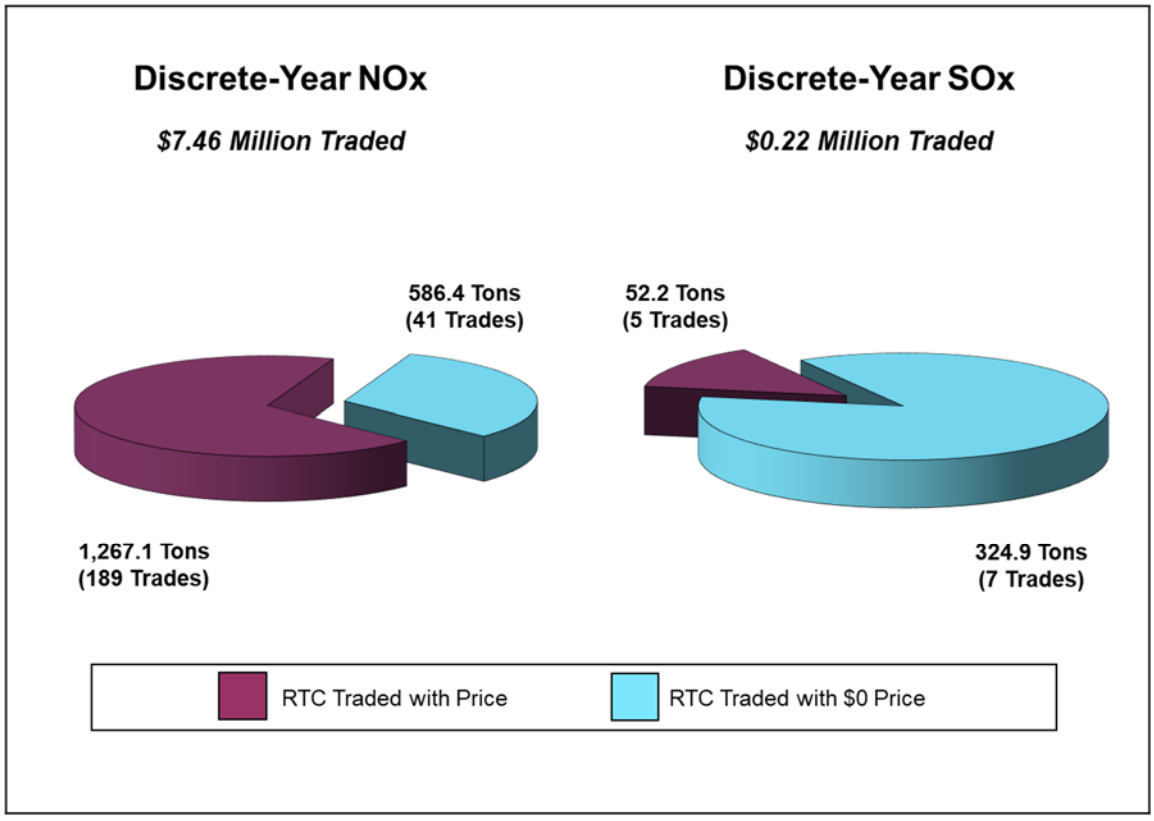
In calendar year 2020, the overall quantities of discrete-year NOx RTCs traded slightly increased compared to calendar year 2019, while the quantities of discrete-year SOx RTCs traded significantly decreased. Table 2-8 compares the volume of NOx and SOx RTCs traded in calendar years 2020 and 2019,

excluding swap trades. Figure 2-5 illustrates the trading activity of discrete-year RTCs (excluding swaps) for calendar year 2020.

Table 2-8
Discrete-Year RTC Volume Traded in Calendar Years 2020 and 2019 by Price, Excluding Swaps (tons)

Year	RTC	With Price	With $0 Price	Total
2020	NOx	1,267	586	1,854
	SOx	52	325	377
	Total	1,319	911	2,231
2019	NOx	1,124	672	1,796
	SOx	230	436	666
	Total	1,354	1,108	2,462

Figure 2-5
Calendar Year 2020 Trading Activity for Discrete-Year RTCs (Excluding Swaps)



IYB RTC Trading Activity

In calendar year 2020, there were 31 IYB NOx trades and four (4) IYB SOx trades, excluding swaps. The IYB NOx trades included RTCs with Compliance Years 2019 through 2022 as start years, while the IYB SOx trades included

RTCs with Compliance Years 2020 and 2021 as start years. Table 2-9 compares the number of RTC trade registrations from 2020 and 2019.

Table 2-9
IYB Trade Registrations in Calendar Years 2020 and 2019 by Price

Year	RTC	With Price	With $0 Price	Total
2020	NOx	18	13	31
	SOx	2	2	4
	Total	20	15	35
2019	NOx	33	9	42
	SOx	6	0	6
	Total	39	9	48

Total IYB RTC trade values significantly decreased in calendar year 2020 compared to calendar year 2019. Table 2-10 compares the NOx and SOx IYB RTC trade values in calendar years 2020 and 2019.

Table 2-10
IYB RTC Value Traded in 2020 and 2019, Excluding Swaps (millions of dollars)

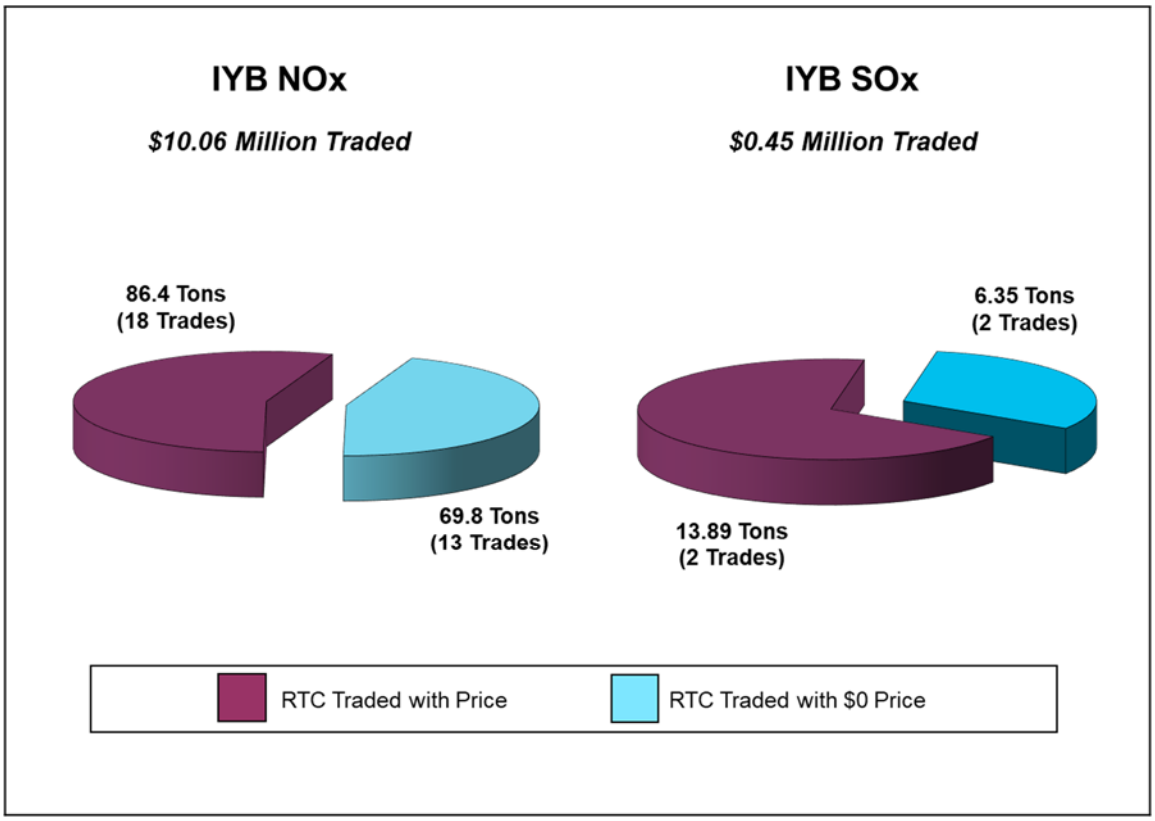
RTC	2020	2019
NOx	$10.06	$28.10
SOx	$0.45	$0.73
Total	$10.51	$28.83

In calendar year 2020, the total volume of IYB RTCs traded (excluding swap trades) decreased significantly compared to calendar year 2019. Despite the large decrease, the amount of IYB RTCs traded is well within the range of historic values. Table 2-11 compares the NOx and SOx IYB RTCs trade volumes in calendar years 2020 and 2019. As described earlier, the majority of trades with zero price were between facilities under common ownership and facilities that had a change of operator. Figure 2-6 illustrates the calendar year 2020 IYB RTC trading activity excluding swap trades.

Table 2-11
IYB RTC Volume Traded in Calendar Years 2020 and 2019 by Price, Excluding Swaps (tons)

Year	RTC	With Price	With $0 Price	Total
2020	NOx	86	70	156
	SOx	14	6	20
	Total	100	76	176
2019	NOx	298	227	526
	SOx	55	0	55
	Total	353	227	581

Figure 2-6
Calendar Year 2020 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-year 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-year NOx trades, discrete-year SOx trades, IYB NOx trades, and IYB SOx trades, respectively) based on the trade reporting methodology described earlier in this chapter.

Figure 2-7
Discrete-Year NOx RTC Trades (Excluding Swaps)

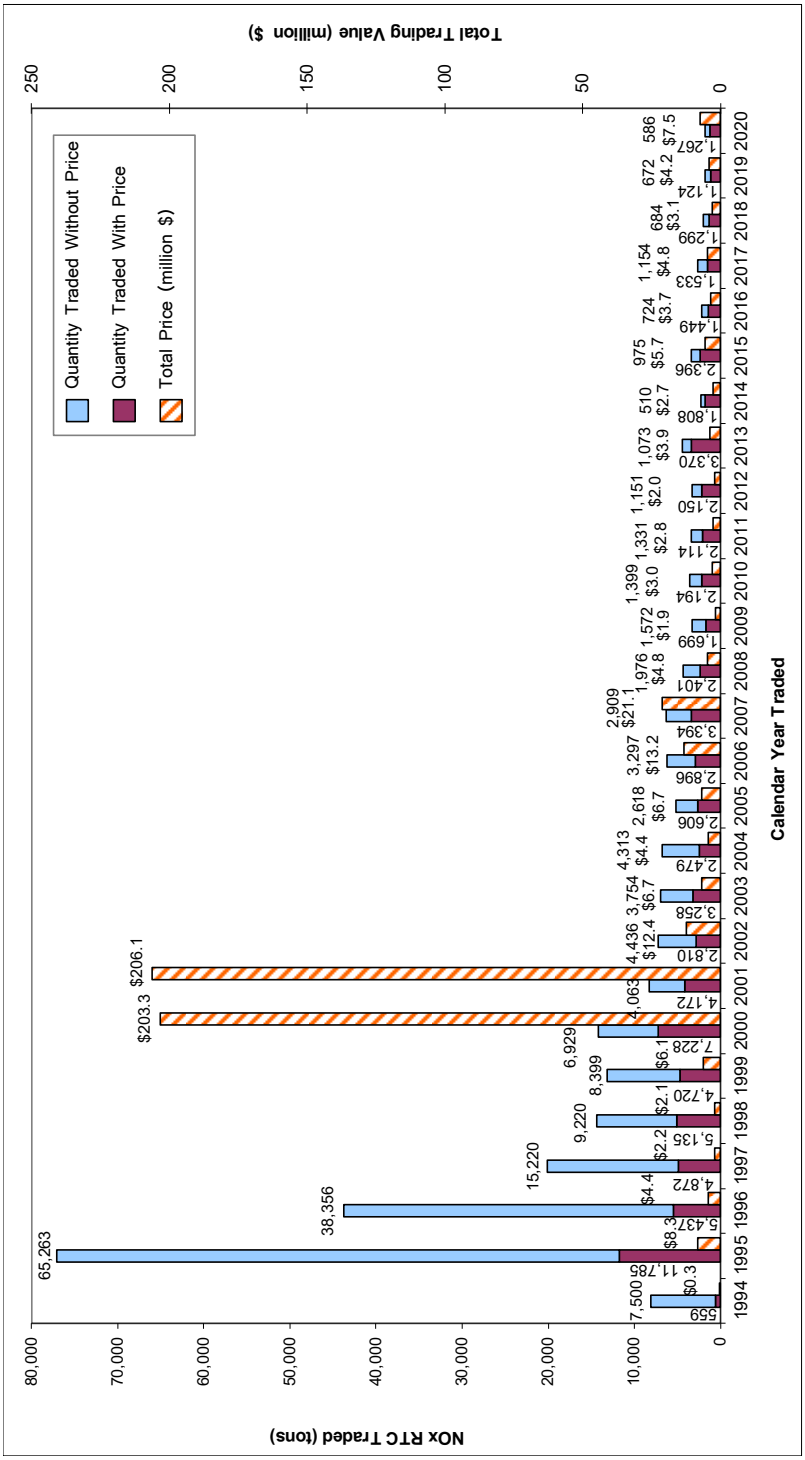


Figure 2-8
Discrete-Year SOx RTC Trades (Excluding Swaps)

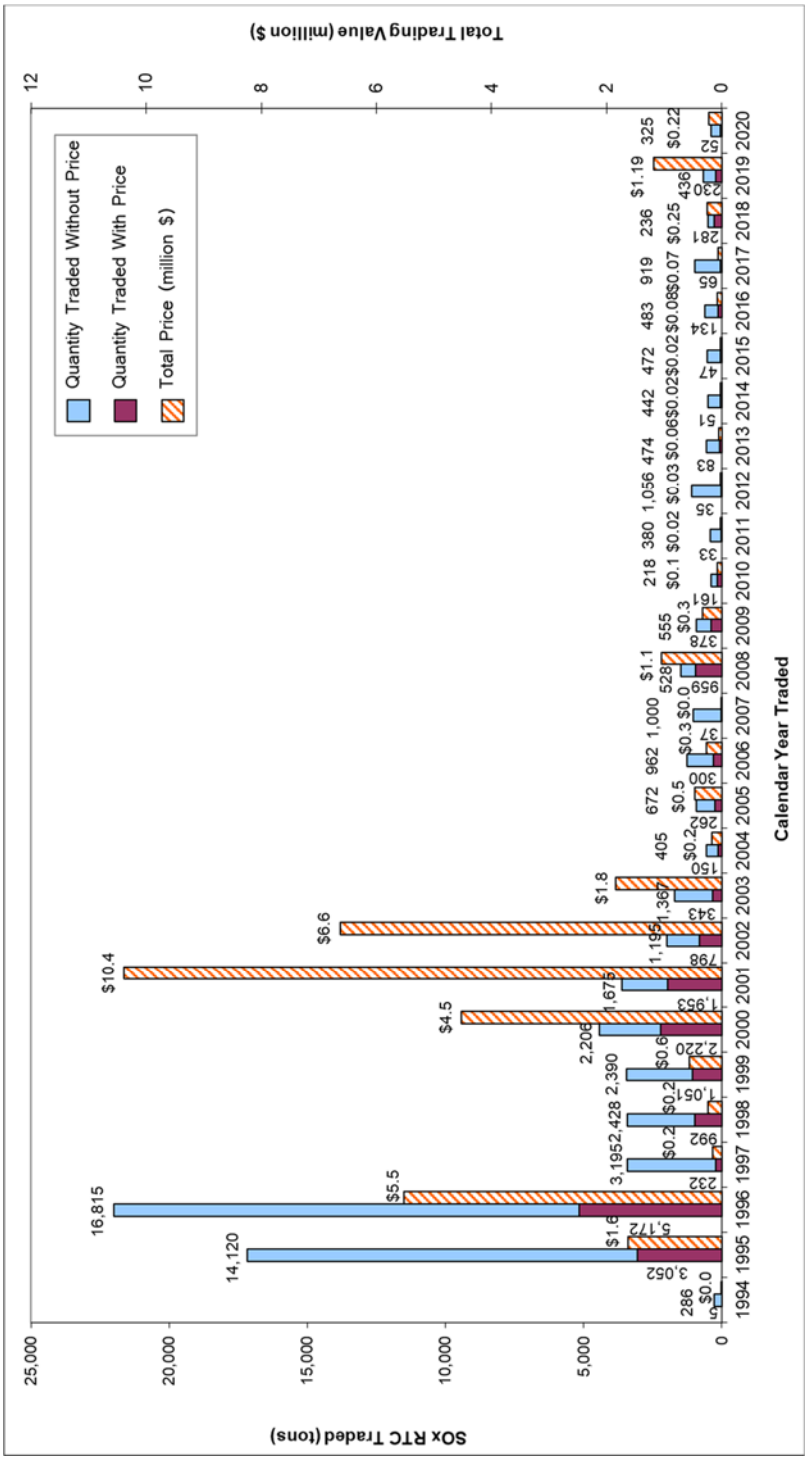


Figure 2-9
IYB NOx RTC Trades (Excluding Swaps)

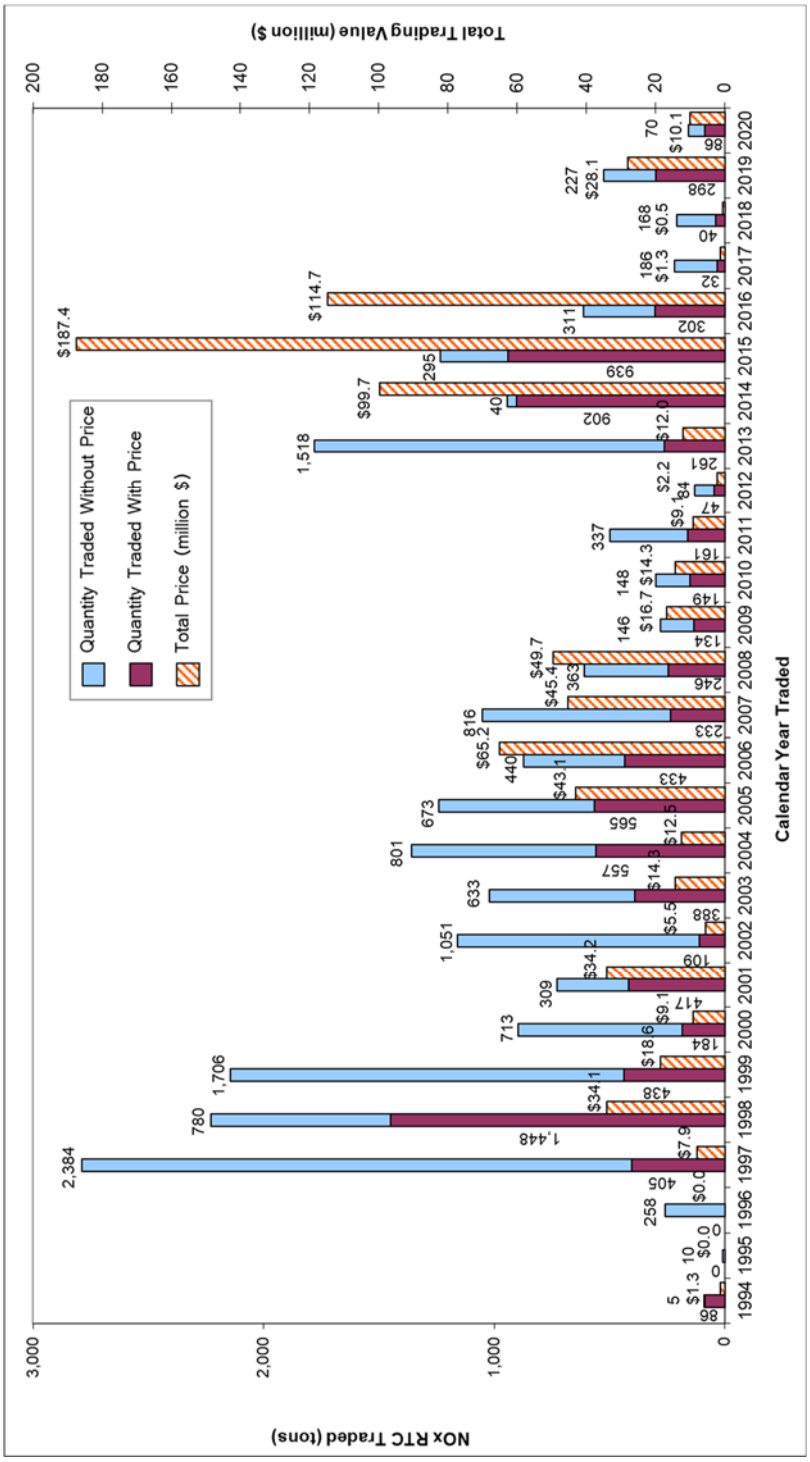
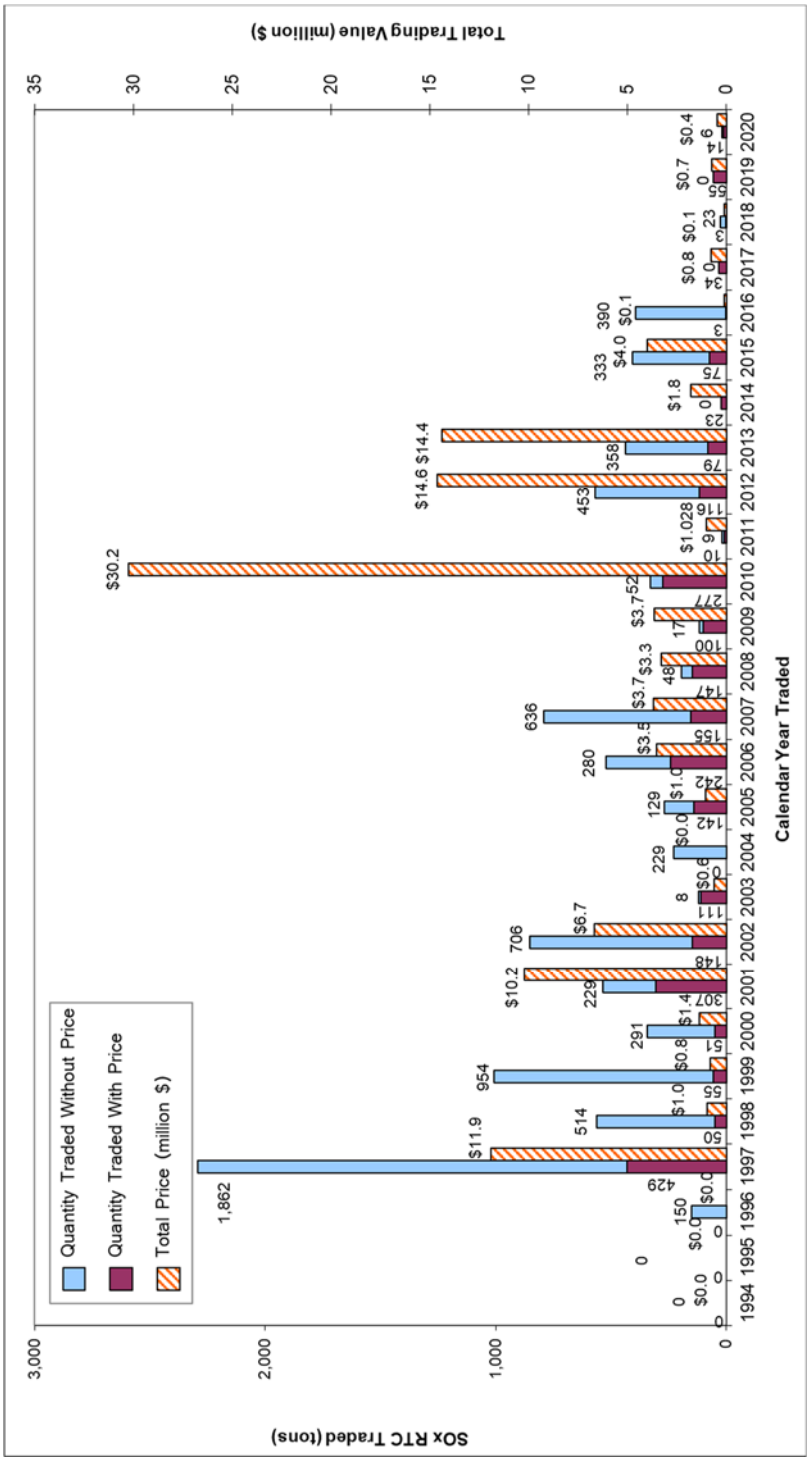


Figure 2-10
IYB SOx RTC Trades (Excluding Swaps)



Swap Trades

In addition to traditional trades of RTCs for a price, RTC swaps also occur between trading partners. Most 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 are 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.

During calendar year 2020, twenty-three trade registrations included RTC swaps with a total value of about $2.3 million. Fourteen swap trades involved swapping a larger quantity of discrete-year RTCs for a smaller quantity of discrete-year RTCs with a later expiration date. These trades were collectively valued at $2.1 million. Four trades involved swapping coastal credits for a larger quantity of inland credits. The total value of these trades was $0.1 million. Two swap trades involved a forward contract, in which one party agreed to purchase RTCs during 2020 and sell the same volume and vintage of RTCs back to the other party in 2022 at zero price. Total value of these trades is $0.1 million. The three remaining trades were between facilities or RTC holders under common ownership. The total value of the remaining three trades is $18,426. Upon further investigation, staff concluded that these three transactions were not at arm's-length, and that the prices reported for the transfer of RTCs for these three trades should not be regarded as market prices but "swap trades." 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 these 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 trades with large values (*e.g.,* 2009), the inclusion of swap trades in the average trade price calculations would have resulted in calculated annual average prices dominated by swap trades, 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 or a true market-based price. Tables 2-12 and 2-13 present the calendar years' 2001 through 2020 RTC swaps for NOx and SOx, respectively.

Table 2-12
NOx Registrations Involving Swaps*

Year	Total Value ($ millions)	IYB RTC Swapped with Price (tons)	Discrete-Year RTC Swapped with Price (tons)	Number of Swap Registrations with Price	Total Number of Swap Registrations
2001	$24.29	6.0	612.2	71	78
2002	$14.31	64.3	1,701.7	94	94
2003	$7.70	69.9	1,198.1	64	64
2004	$3.74	0	1,730.5	90	90
2005	$3.89	18.7	885.3	53	53
2006	$7.29	14.8	1,105.9	49	49
2007	$4.14	0	820.0	43	49
2008	$8.41	4.5	1,945.8	48	50
2009	$55.76	394.2	1,188.4	37	42
2010	$3.73	18.2	928.5	25	31
2011	$2.00	0	775.5	25	32
2012	$1.29	0	928.1	36	36
2013	$2.41	11.6	1,273.5	44	44
2014	$3.24	28.5	489.6	25	25
2015	$6.77	31.0	317.0	15	15
2016	$2.18	1.8	622.8	22	22
2017	$0.87	3.6	31.0	9	9
2018	$0.51	0	178.5	4	4
2019	$0.37	0	128.8	7	7
2020	$1.79	0	324.6	18	18

* 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 2-13
SOx Registrations Involving Swaps*

Year	Total Value ($ millions)	IYB RTC Swapped with Price (tons)	Discrete-Year 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
2016	$3.68	39.6	44.2	3	3
2017	$0.73	5.0	5.9	4	4
2018	$0	0	0	0	0
2019	$0.02	0	1.4	1	1
2020	$0.51	0	80.2	5	5

* 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 (Excluding Swaps)

Discrete-Year RTC Prices

Tables 2-14 and 2-15 list the annual average prices for discrete-year NOx and SOx RTCs traded from calendar years 2015 through 2020. The table shows that all annual average prices for discrete-year NOx and SOx RTCs were well below the $47,585 per ton of NOx and $34,261 per ton of SOx discrete-year RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f), and the $15,000 threshold specified under Rule 2015(b)(6) for reviews of the compliance aspects of the program.

Table 2-14
Annual Average Prices for Discrete-Year NOx RTCs during Calendar Years 2015 through 2020 (price per ton)

RTC Compliance Year	Calendar Year during which RTCs Traded					
	2015	2016	2017	2018	2019	2020
2011						
2012						
2013						
2014	1,038.82					
2015	1,642.05	1,625.75				
2016	2,833.39	2,926.90	2,202.90			
2017	4,019.76	6,606.21	4,181.75	1,871.76		
2018	6,006.11		10,639.19	3,788.31	2,261.39	
2019	8,066.67			5,645.67	5,409.79	4,286.74
2020				5,673.91	12,189.81	8,322.89
2021					8,677.54	9,417.56

Table 2-15
Annual Average Prices for Discrete-Year SOx RTCs during Calendar Years 2015 through 2020 (price per ton)

RTC Compliance Year	Calendar Year during which RTCs Traded					
	2015	2016	2017	2018	2019	2020
2011						
2012						
2013						
2014	483.40					
2015	380.00	540.29				
2016		1,254.55	635.83			
2017			1,385.71	785.56		
2018				954.61	1,764.20	
2019			4,800.00		7,984.79	4,386.87
2020			4,800.00			2,300.00
2021						

Rolling Average NOx and SOx RTCs Price Report

On December 4, 2015, the Governing Board amended Rule 2002 to change the 12-month rolling average price of NOx RTCs for all trades for the current compliance year, excluding RTC trades reported at no price and swap transactions, to a $22,500 per ton threshold. It also established a new $35,000 per ton threshold for the three-month rolling average price of current compliance year NOx RTCs and a $200,000 per ton "price-floor" threshold for the twelve-month rolling average price of IYB NOx RTCs that would have become effective in 2019. The price floor in 2002(f)(1)(I) was subsequently removed by the Governing Board on October 5, 2018. The reporting of the three-month rolling average prices for current compliance year's NOx RTCs and the twelve-month rolling average prices of IYB NOx RTCs started on May 1, 2016. The October 5, 2018 amendment to Rule 2002 eliminated the requirement to calculate IYB NOx RTC prices. The October 2018 report to the South Coast

AQMD Stationary Source Committee was the last time the twelve-month rolling average prices of IYB NOx RTCs report was generated.

The December 2015 amendments directed the Executive Officer to report to the Governing Board if (a) the cost of current compliance year NOx RTCs exceeds $22,500 per ton based on the twelve-month rolling average price, or (b) $35,000 per ton based on the three-month rolling average price. If either (a) or (b) above occurs, the Governing Board may convert the Non-tradable/Non-usable NOx RTCs valid for the period in which the RTC price(s) exceeded an applicable threshold to Tradable/Usable NOx RTCs pursuant to Rule 2002(f)(1)(H). Additionally, the Executive Officer's report to the Governing Board will include a "commitment and schedule to conduct a more rigorous control technology implementation, emission reduction, cost-effectiveness, market analysis, and socioeconomic impact assessment of the RECLAIM program."

Starting January 2017, the Executive Officer calculates and reports the twelve-month rolling average prices for current compliance year SOx RTCs as required by the November 5, 2010 amendment to Rule 2002, which established the $50,000 per ton of SOx RTC threshold. In the event that the SOx RTC price threshold is exceeded, the Governing Board will decide whether or not to convert any portion of the Non-tradable/Non-usable SOx RTCs to Tradable/Usable SOx RTCs. Tables 2-16 through 2-18 list the various rolling average prices described above. The average NOx and SOx discrete-year RTC prices have all remained well below the applicable reporting thresholds,

Table 2-16
Twelve-Month Rolling Average Prices of Compliance Year 2020 Discrete-Year NOx RTCs

Reporting Month	12-Month Period	Average Price ($/ton)
January 2020	January 2019 through December 2019	$12,190
February 2020	February 2019 through January 2020	$10,770
March 2020	March 2019 through February 2020	$8,220
April 2020	April 2019 through March 2020	$8,186
May 2020	May 2019 through April 2020	$7,921
June 2020	June 2019 through May 2020	$7,975
July 2020	July 2019 through June 2020	$9,620
August 2020	August 2019 through July 2020	$9,781
September 2020	September 2019 through August 2020	$9,758
October 2020	October 2019 through September 2020	$9,755
November 2020	November 2019 through October 2020	$9,447
December 2020	December 2019 through November 2020	$9,607
January 2021	January 2020 through December 2020	$8,323

Table 2-17
Three-Month Rolling Average Prices of Compliance Year 2020 Discrete-Year NOx RTCs

Reporting Month	3-Month Period	Average Price ($/ton)
January 2020	October 2019 through December 2019	$12,190
February 2020	November 2019 through January 2020	$10,890
March 2020	December 2019 through February 2020	$8,438
April 2020	January 2020 through March 2020	$6,024
May 2020	February 2020 through April 2020	$5,054
June 2020	March 2020 through May 2020	$6,179
July 2020	April 2020 through June 2020	$12,232
August 2020	May 2020 through July 2020	$13,720
September 2020	June 2020 through August 2020	$13,261
October 2020	July 2020 through September 2020	$11,128
November 2020	August 2020 through October 2020	$8,286
December 2020	September 2020 through November 2020	$8,057
January 2021	October 2020 through December 2020	$6,659

Table 2-18
Twelve-Month Rolling Average Prices of Compliance Year 2020 Discrete-Year SOx RTCs

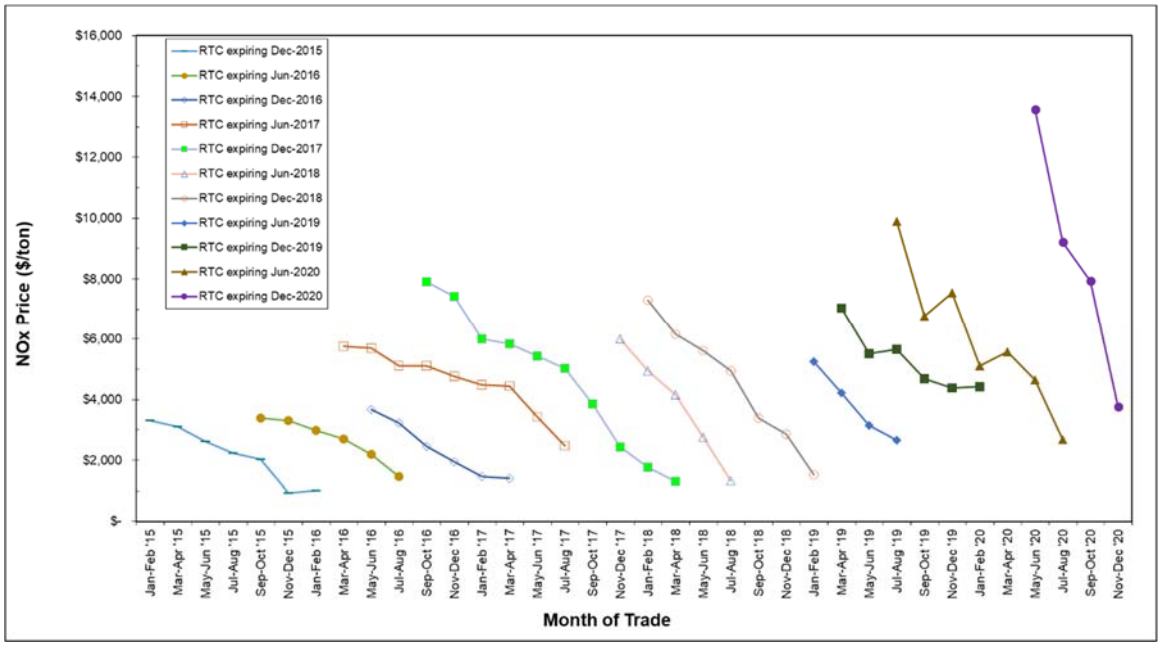
Reporting Month	12-Month Period	Average Price ($/ton)
January 2020	January 2019 through December 2019	-
February 2020	February 2019 through January 2020	-
March 2020	March 2019 through February 2020	-
April 2020	April 2019 through March 2020	-
May 2020	May 2019 through April 2020	-
June 2020	June 2019 through May 2020	-
July 2020	July 2019 through June 2020	-
August 2020	August 2019 through July 2020	-
September 2020	September 2019 through August 2020	-
October 2020	October 2019 through September 2020	-
November 2020	November 2019 through October 2020	-
December 2020	December 2019 through November 2020	-
January 2021	January 2020 through December 2020	$2,300

Average Price for NOx RTCs Nearing Expiration

Generally, RTC prices decrease as their expiration dates approach, and 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 2020 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 prices for these near-expiration NOx RTCs are shown in Figure 2-11 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 each compliance year. 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 2020, there were only five discrete-year SOx trades with price for Compliance Years' 2019 and 2020 RTCs. These prices ranged from $800 per ton to $5,600 per ton throughout the year.

Figure 2-11
Bi-Monthly Average Prices for NOx RTCs near Expiration



Note: Data is presented for a limited number of RTC expiration dates for graphical clarity.

IYB RTC Prices

The annual average price for IYB NOx RTCs traded in calendar year 2020 was $116,405 per ton, which is higher than the annual average price of $94,183 per ton traded in calendar year 2019. The annual average price for IYB SOx RTCs

traded in calendar year 2020 was $32,251 per ton, which is much higher than the $13,213 per ton traded in calendar year 2019 but more consistent with IYB SOx RTC prices prior to calendar year 2019. 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 2-19 and 2-20, respectively. In calendar year 2019, the annual average IYB RTC prices did not exceed the $713,777 per ton of NOx RTCs or the $513,919 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).

Table 2-19
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
2016	$114.7	301.9	20	$380,057
2017	$1.26	31.8	6	$39,673
2018	$0.52	39.6	5	$13,223
2019	$28.1	298.4	33	$94,183
2020	$10.1	86.4	18	$116,405

* No information regarding swap trades was reported until May 9, 2001.

Table 2-20
IYB 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
2016	$0.13	2.5	1	$50,000
2017	$0.77	33.92	4	$22,820
2018	$0.09	3.16	2	$30,000
2019	$0.73	54.9	6	$13,213
2020	$0.45	13.89	2	$32,251

* No information regarding swap trades was reported until May 9, 2001.

Recent Program Amendments' Effect on IYB NOx RTC Trading Trend

With the planned transition to a command-and-control regulatory structure, the longevity and utility of IYB NOx RTCs would be expected to diminish. Therefore, it is reasonable for the values of volume traded and of IYB NOx RTCs to decrease as they did in calendar years 2017 and 2018. However, the volumes traded and values of IYB NOx RTCs increased significantly in calendar years 2019 and 2020 versus 2017 and 2018.

In subsequent working group meetings and discussion with USEPA, several issues were found in transitioning the New Source Review component of the program. Recent developments (see discussion on Program Amendments in Chapter 3) on RECLAIM transition have led to postponing the final transition of facilities out of RECLAIM until all necessary rules have been adopted and

approved into the SIP. This delay has apparently created volatility in the trends of IYB NOx RTC trades.

In calendar year 2020, the values of IYB NOx RTCs continued to increase as it did in calendar year 2019. The surge in IYB trading activity in the latter half of 2019 continued into calendar year 2020. While the volume traded and the total value traded of IYB NOx RTCs decreased as compared to calendar year 2019, the price per ton increased. From calendar year 2019 to 2020, the price per ton increased by 24%, which is not as substantial as the increase of 612% from calendar year 2018 to 2019. Calendar year 2020 IYB NOx price per ton is more comparable to the annual average prices in years prior to calendar year 2017.

This year, petroleum refining companies purchased 85.9% of the IYB NOx RTCs sold with price, down from the 98.6% of the IYB NOx RTCs bought by these facilities in calendar year 2019. In total, 74 tons of IYB NOx RTCs were bought by these refineries. In general, refineries tend not to sell RTCs, and instead tend to use the credits solely to reconcile their annual emissions. These recent purchases effectively removed 74 tons of IYB NOx RTCs from the market and reduced liquidity.

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 trades, 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 has 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 South Coast AQMD within five business days of reaching an agreement. These reports are posted on South Coast AQMD's website. There were two reports submitted in calendar year 2020 identifying an agreed upon contingent right to buy or sell RTCs. Neither of these reported rights were exercised in calendar year 2020.

In addition to reconciling emissions at RECLAIM facilities, RTCs are also used by RTC holders to satisfy variance conditions and offset other projects. During calendar year 2020, two such instances occurred. In the first case, a non-RECLAIM facility retired 7.5 tons of NOx RTCs to comply with a Supplemental Environmental Impact Report mandated Mitigation Monitoring Program. In the second case, a RECLAIM facility retired 0.2 tons of SOx RTCs to satisfy a variance condition.

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 only facilitate trades.

Investor Participation

In 2020, investors were actively involved in 151 of the 189 discrete-year NOx RTC trades with price and 4 of the 5 discrete-year SOx RTC trades with price. Investors were involved in 10 of the 18 IYB NOx trades with price, and both IYB SOx trades with price.

Investors' involvement in discrete-year NOx and SOx trades registered with price in calendar year 2020 is illustrated in Figures 2-12 and 2-13. Figure 2-12 is based on total value of discrete-year NOx and SOx RTCs traded and shows that investors were involved in 72% and 62%, respectively, of the discrete-year NOx and SOx trades reported by value. Figure 2-13 is based on volume of discrete-year RTCs traded with price and shows that investors were involved in 66% and 71% of the discrete-year NOx and SOx trades by volume, respectively. Figures 2-14 and 2-15 provide similar data for IYB NOx and SOx trades. Investors were involved in 61% and 100% of IYB NOx and SOx trades by value, and in 63% and 100% of IYB NOx and SOx trades by volume, respectively.

Figure 2-12
Calendar Year 2020 Investor-Involved Discrete-Year NOx and SOx Trades Based on Value Traded

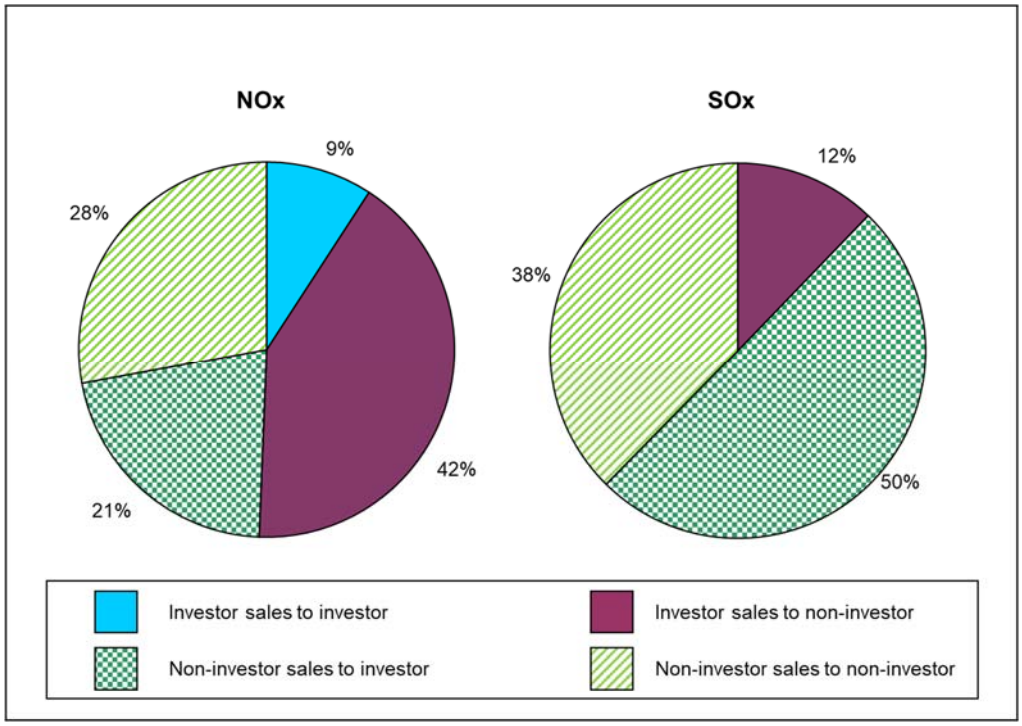


Figure 2-13
Calendar Year 2020 Investor-Involved Discrete-Year NOx and SOx Trades Based on Volume Traded with Price

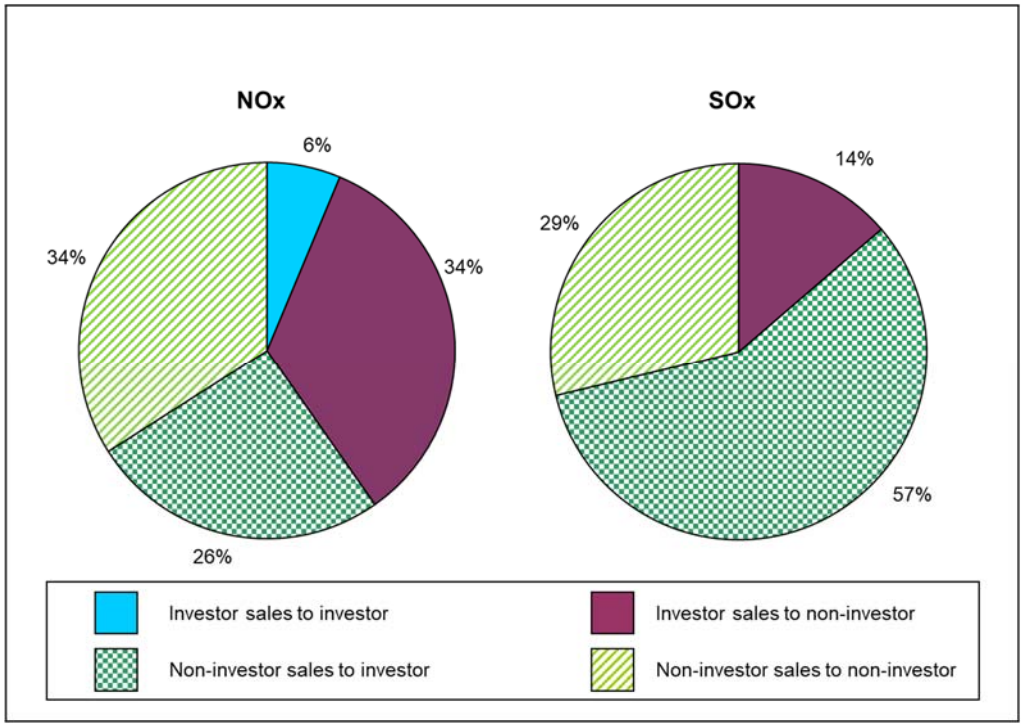


Figure 2-14
Calendar Year 2020 Investor-Involved IYB NOx and SOx Trades Based on Value Traded

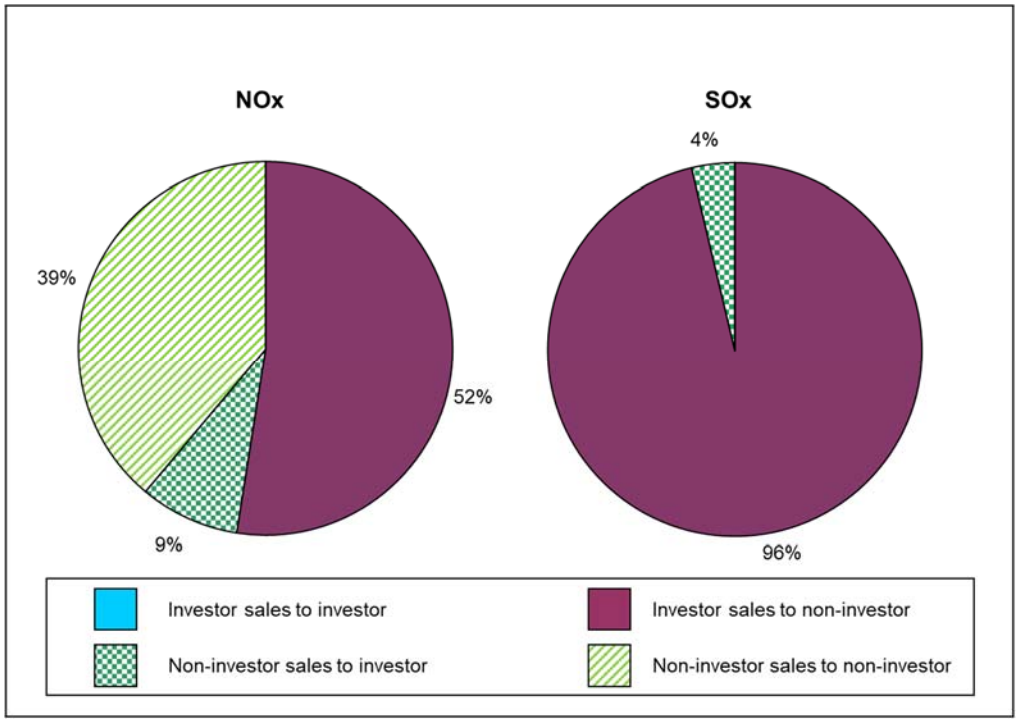
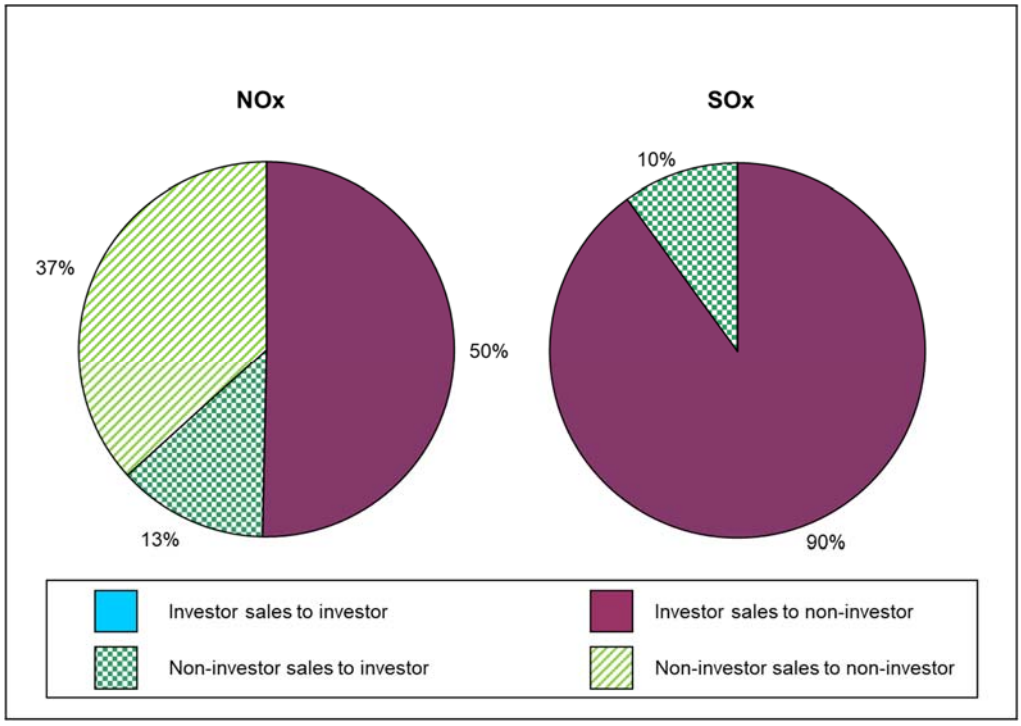


Figure 2-15
Calendar Year 2020 Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price



As of the end of calendar year 2020, investors' holding of IYB NOx RTCs had stayed consistent at 1.3% when compared to the end of calendar year 2019. Mutual fund investors are no longer holders of IYB NOx RTCs, down from highs 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 went slightly down to 4.2% when compared to the end of calendar year 2019 at 4.7%. 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. Seven NOx RECLAIM facilities shut down during Compliance Year 2019. One of these facilities bought RTCs year to year. Another facility had no emissions or RTCs for more than 10 years prior to shut down. The other five facilities held a total of 45.5 tons of IYB NOx RTCs prior to their shutdown. Three of the five facilities sold a total of 30.9 tons of IYB NOx RTCs to investors. The two remaining facilities transferred 9.3 tons IYB NOx RTCs to facilities under common ownership, leaving 5.3 tons in their allocation accounts.

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, they do not have the option to switch to another source of credits when RTCs become expensive because there is no alternative source of credits available to RECLAIM facilities. 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 RTCs 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 South Coast AQMD 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 2019, the total RECLAIM NOx emissions were 6,597 tons, while the total NOx RTC allocation was 8,243 tons. This NOx RTC surplus of 1,646 tons (20% of allocation, and 25% of emissions) is well above the 10% compliance margin reportedly held by RECLAIM facilities. If the future total NOx emissions stay constant, the difference between the NOx RTC allocation and NOx emissions would not decrease below 10% until Compliance Year 2021.

As shown in Table 3-1, there was an excess of 1,646 tons of NOx RTCs at the end of Compliance Year 2019. During calendar year 2020, 74 tons of IYB NOx RTCs were purchased by three petroleum refining companies. Based on the industry's historical practice of holding and not selling RTCs, this could result in less RTC availability even though there may be a surplus. If the refineries'

purchases are considered removed from the market, the surplus would effectively be 1,572 tons, representing an even more substantial decrease in unused RTCs.

In past annual audit reports, staff made comparisons between emissions and future available RTC supplies to highlight the potential of a seller's market for NOx RTCs if adequate emissions controls were not implemented in a timely manner. Despite the small percentage of RTCs held by investors (1.3% at the end of calendar year 2020), their impact on RTC availability and prices can be significant because of their participation in most of the trades, which may allow them to be in a strong position to influence prices. As evidenced in the trade of Compliance Year 2021 NOx RTCs, the price of RTCs purchased by facilities at the end of calendar year 2020 to comply with NSR requirements moderated relative to RTC prices paid at the end of calendar year 2019 for Compliance Year 2020 NOx RTCs

CHAPTER 3
EMISSION REDUCTIONS ACHIEVED

Summary

For Compliance Year 2019, aggregate NOx emissions were below total allocations by 20% 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 2019. 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 2019. With respect to the Rule 2015 backstop provisions, Compliance Year 2019 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, or 7.7 tons/day) 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 45.2% (4,380 tons/year, or 12.0 tons/day) by Compliance Year 2022. The reductions are phased-in from Compliance Year 2016 through Compliance Year 2022 with 4 tons/day of the NOx Allocation reduction occurring through Compliance Year 2019.

The Board also amended Rule 2002 in November 2010 to implement BARCT for SOx. Specifically, the November 2010 amendments called for certain facilities' RECLAIM SOx allocations to be adjusted to achieve a 48.4% (2,081 tons/year, or 5.7 tons/day) overall reduction, with the reductions phased-in from Compliance Year 2013 through Compliance Year 2019. The final 255.5 tons/year (0.7 tons/day) allocation reduction occurred in Compliance Year 2019.

Emissions Audit Process

Since the inception of the RECLAIM program, South Coast AQMD 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.

South Coast AQMD staff adjusts the APEP-reported emissions based on audit results, as necessary. Whenever South Coast AQMD 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 South Coast AQMD'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 pollutant are met each year.

Table 3-1 and Figure 3-1 show aggregate audited NOx emissions and the aggregate annual NOx RTC supply for Compliance Years 1994 through 2019. No facility audits for Compliance Years 1994 through 2017 were reopened during the past year, so the aggregate audited NOx and SOx emissions for these years are unchanged from the previous annual report. 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. Aggregate NOx allocations for Compliance Year 2019 were reduced by 1,470 tons from Compliance Year 2015 levels due to the 2015 BARCT-related amendment of Rule 2002.

Annual NOx emissions remained within a narrow range (7,246 tons to 7,691 tons annually) between Compliance Years 2011 and 2017. A trend of reduced NOx emissions is seen for the past two compliance years. Compliance Year 2019 NOx emissions were more than 600 tons below this range at 6,597 tons. Compliance Year 2019 NOx emissions were below total allocations by 20%.

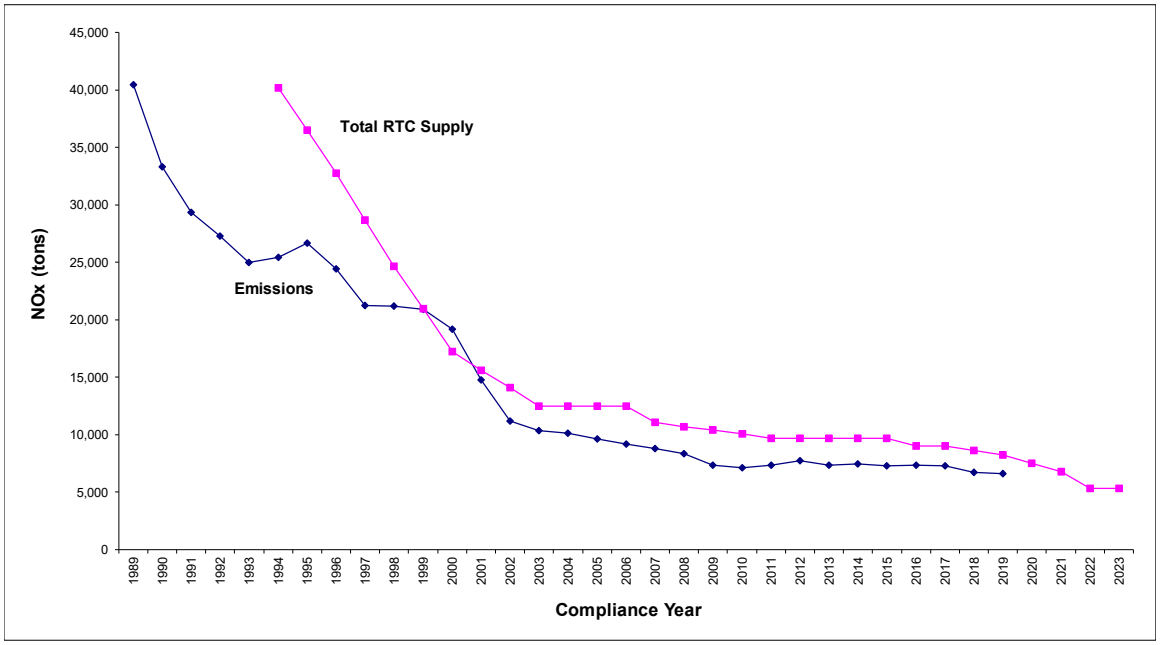
Table 3-1
Annual NOx Emissions for Compliance Years 1994 through 2019

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%	40,187	14,767	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%
2015	7,246	-71%	9,700	2,454	25%
2016	7,328	-71%	8,992	1,664	19%
2017	7,246	-71%	8,978	1,732	19%
2018	6,740	-73%	8,612	1,872	22%
2019	6,597	-74%	8,243	1,646	20%

[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 3-1 and Figure 3-1 for NOx, Table 3-2 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 3-2 and Figure 3-2, RECLAIM facilities have not exceeded their SOx allocations on an aggregate basis in any compliance year since program inception. Aggregate SOx allocations from Compliance Year 2003 through Compliance Year 2012, prior to the 2010 BARCT-related amendment to Rule 2002, were relatively constant. At that time, the amount of unused RTCs peaked at 40%. Since then, Compliance Year 2019 SOx allocations were reduced by about 2,081 tons. On the other hand, annual SOx emissions steadily declined between Compliance Years 2007 and 2013, and remained within a narrow range between Compliance Year 2013 and 2018 (between 2,024 tons and 2,176 tons). For Compliance Year 2019, SOx emissions decreased by 433 tons compared to those in Compliance Year 2018 (from 2,134 tons to 1,701 tons). SOx emissions in Compliance Year 2019 were below total allocations by 23%, compared to 14% for Compliance Year 2018. 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.

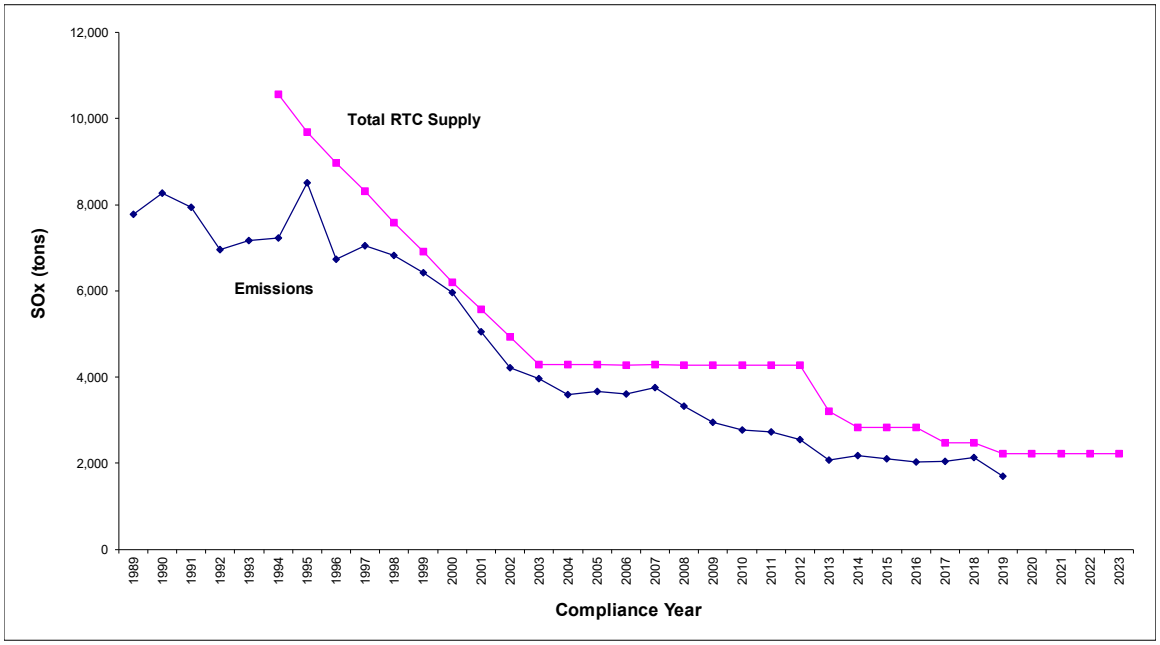
Table 3-2
Annual SOx Emissions for Compliance Years 1994 through 2019

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%	10,559	3,329	32%
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%
2015	2,096	-71%	2,836	740	26%
2016	2,024	-72%	2,836	812	29%
2017	2,043	-72%	2,474	431	17%
2018	2,134	-70%	2,474	340	14%
2019	1,701	-76%	2,221	520	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 rules[1] and sought to achieve reductions equivalent to these subsumed rules that continue to apply to non-RECLAIM facilities. RECLAIM facilities were 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, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions, respectively. However, as part of the effort to transition[2] the RECLAIM program from a market incentive-based program to a command-and-control regulatory structure requiring BARCT level controls as soon as practicable, the Governing Board, on October 5, 2018, amended Rule 2001 specifying that RECLAIM facilities are required to comply with the rules contained in Table 1 of Rule 2001 that are adopted or amended on or after October 5, 2018. As subsumed NOx rules in Table 1 of Rule 2001 are amended after this date the requirements of these, and prospective amended or adopted rules, apply equally to both RECLAIM and non-RECLAIM facilities (see "Landing Rules" paragraph under "Program Amendments"). There were no new subsumed SOx rules in Table 2 of Rule 2001 adopted or amended in Compliance Year 2019[3].

[1] See Tables 1 and 2 of Rule 2001.

[2] Pursuant to both the March 3, 2017 Governing Board adopted resolution during the adoption of the 2016 AQMP, and California State Assembly Bill (AB) 617 approved in July 2017.

[3] As discussed in the "Annual RECLAIM Audit Report for 2018 Compliance Year" (March 6, 2020), the applicable requirements of amended rules 1310 and 1325 to SOx sources were administrative, and

As discussed in last year's "Annual RECLAIM Audit Report for 2018 Compliance Year", on July 12, 2019, two rules not subsumed by RECLAIM, Regulation IX – Standards of Performance for New Stationary Sources (NSPS) and Regulation X National Emission Standards for Hazardous Air Pollutants (NESHAPS), were amended by the Governing Board to incorporate new or amended federal standards that had been enacted by USEPA for stationary sources. Historically, the Governing Board adopted NSPS (40 CFR 60) and NESHAP (40 CFR 61) actions 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. Regulations IX and X were previously last amended October 7, 2016, and April 3, 2015, respectively. The amendments to Regulation IX and X incorporate new or revised NSPS and NESHAP actions that had since occurred. In 2016, USEPA promulgated one new NSPS for municipal solid waste landfills that commence construction, reconstruction, or modification after July 17, 2014. In addition, USEPA also amended existing provisions of six NSPS standards, two NSPS appendices, one NESHAP standard, and one NESHAP appendix. The amendments to Regulation IX and X incorporated these USEPA NSPS and NESHAP actions into SCAQMD's regulations.

Additionally, one other rule not subsumed by RECLAIM, Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces, was amended by the Governing Board on December 6, 2019, to reduce NOx emissions from residential and commercial gas-fired fan-type space heating furnaces with a rated heat input capacity of less than 175,000 BTU per hour and applies to manufacturers, distributors, sellers, and installers of such furnaces. Rule 1111 was amended in 2009 to lower the NOx emission limit from 40 to 14 ng/Joule (ng/J), and again amended in 2014 to include a mitigation fee option where manufacturers can pay a per-unit fee in lieu of meeting the Ultra Low-NOx emission limit of 14 ng/J. The mitigation fee option for condensing and non-condensing furnaces ended on September 30, 2019. The December 6, 2019 latest amendment to Rule 1111 also included a limited exemption from the Ultra Low NOx emission limit as it applies to furnaces installed at elevations greater than or equal to 4,200 feet above sea level until October 1, 2020. During this interim exemption, furnaces would be required to meet the Low-NOx (40 ng/J) emission limit, while providing manufacturers time to conduct high altitude testing, develop kits, and guidance for the installation of furnaces in higher elevations.

Since Regulation IX, Regulation X, and Rule 1111 were not subsumed under RECLAIM and contained no exemptions from their applicability to RECLAIM NOx or SOx sources, the requirements of these amended rules apply equally to both RECLAIM and non-RECLAIM facilities. As such, 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, during Compliance Year 2019, both rules subsumed by RECLAIM, and rules not subsumed by RECLAIM that were recently amended or

intended to facilitate SIP approval and did not result in any limitations on SOx sources at non-RECLAIM facilities. Hence, amendments to rules 1310 and 1325 applied equally to RECLAIM and non-RECLAIM sources and did not result in disproportionate impacts.

adopted, 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

On March 3, 2017, the Governing Board adopted a resolution during the adoption of the 2016 AQMP that directed staff to modify Control Measure CMB-05 – Further NOx Reductions from RECLAIM Assessment to achieve an additional five tons per day NOx emission reductions as soon as feasible but no later than 2025, and to transition the RECLAIM program to a command-and-control regulatory structure requiring BARCT level controls as soon as practicable. Additionally, California State Assembly Bill (AB) 617 was approved in July 2017, requiring an expedited schedule for implementing BARCT at RECLAIM facilities that are covered by the Greenhouse Gas (GHG) cap-and-trade program no later than December 31, 2023.

Transition Process

To further this effort, staff organized and held monthly working group meetings (with the first meeting held on June 8, 2017) to discuss the transition of facilities in the RECLAIM program to a command-and-control regulatory structure and to discuss key policy issues. The objective is to provide an open forum for all stake holders to discuss and guide the transition process. The goal is to develop "Landing Rules" establishing the BARCT emission levels for equipment transitioning out of the NOx RECLAIM program. Rule 2001 – Applicability specifically exempts RECLAIM facilities from a number of existing command-and-control NOx rules (see Table 1 of Rule 2001). As part of the transition process, these command-and-control rules have to be amended and additional new NOx BARCT command-and-control rules have to be adopted (collectively referred to as "Landing Rules") to ensure that when a facility transitions out of RECLAIM, its NOx equipment has explicit BARCT emission limits and an appropriate time frame to achieve compliance.

To initiate the transition of NOx sources out of RECLAIM, Rule 2001 – Applicability, and Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), were amended by the Governing Board on January 5, 2018. Amended Rule 2001 precluded new or existing facilities from entering the NOx and SOx RECLAIM programs as of January 5, 2018. Amended Rule 2002 contained notification procedures for facilities that will be transitioned out of RECLAIM, and addressed the RTC holdings for facilities that will be transitioned out or that elect to exit RECLAIM. Under amended Rule 2002, the Executive Officer will provide an initial determination notification to a RECLAIM facility for potential exit to a command-and-control regulatory structure with requirements for the facility to identify all NOx-emitting equipment. This initial determination notification serves as a preliminary notice to a facility for which all NOx sources are covered by Landing Rules, and will be issued when South Coast AQMD staff determines every permitted NOx source is covered by Landing Rules. When an initial determination notification is issued to a facility, the RECLAIM facility then has 45 days from the date of the notification to identify all NOx-emitting equipment. Failure to provide this information to South Coast AQMD will result in a freeze on RTC uses, trades, or transfers until the requested information is submitted. If the RECLAIM facility is deemed ready for transition after Executive

Officer review, it will receive a final determination notification that will require its exit from RECLAIM and will become subject to command-and-control regulations. If the RECLAIM facility is deemed as not ready for the transition, it will be notified that it will remain in NOx RECLAIM until a later time. Upon exiting RECLAIM, the facility's future compliance year RTCs cannot be sold or transferred, and only RTCs valid for the then current compliance year can be used or sold.

Staff originally identified an initial group of 38 facilities that could potentially exit the NOx RECLAIM program because they had no facility NOx emissions, or had NOx emissions solely from the combination of equipment exempt from obtaining a written permit pursuant to Rule 219 (unless the equipment would be subject to a command-and-control rule that it could not reasonably comply with), various locations permits, or unpermitted equipment and/or RECLAIM equipment that met current command-and-control BARCT rules. However, these facilities have not been issued final determinations to exit RECLAIM pending resolution with USEPA of New Source Review provisions for facilities that are expected to be transitioned out of RECLAIM.

Rules 2001 and 2002 were again amended by the Governing Board on October 5, 2018. Amended Rule 2001 added a provision to allow facilities to opt out of RECLAIM if certain criteria were met. Additionally, Tables 1 and 2 had previously contained only rules that were not applicable to RECLAIM facilities pertaining to NOx or SOx emissions, respectively. However, in order to facilitate the transition process, the amendments to Rule 2001 specify that RECLAIM facilities are required to comply with the rules contained in Table 1 that are adopted or amended on or after October 5, 2018. Amended Rule 2002 provided an option for facilities that received an initial determination notification to stay in RECLAIM for a limited time, while complying with applicable command-and-control requirements. Additionally, amended Rule 2002 established a requirement that facilities which are issued a final determination to be transitioned out of the NOx RECLAIM program to provide emission reduction credits to offset any NOx emissions increases, calculated pursuant to Rule 1306 – Emission Calculations, notwithstanding the exemptions contained in Rule 1304 – Exemptions and the requirements contained in Rule 1309.1 – Priority Reserve, until New Source Review provisions governing NOx emission calculations and offsets are amended to address former RECLAIM sources. Finally, Rule 2002 removed the requirement to report IYB NOx RTC prices to the Board when the price falls below the minimum threshold.

Rule 2001 was again amended by the Governing Board on July 12, 2019, to remove the opt-out provision provided for in the October 5, 2018 amendments to the rule. This amendment was in response to USEPA's recommendation that facilities remain in RECLAIM until all rules associated with the transition to a command-and-control regulatory structure have been adopted and approved into the SIP.

Landing Rules

As explained earlier, Landing Rules are needed to establish BARCT emission limits, the timing for the implementation of BARCT, and monitoring, reporting, and recordkeeping (MRR) requirements. These Landing Rules also serve to facilitate the transition process for RECLAIM facilities from the requirements of

RECLAIM to a command-and-control regulatory structure. Determination of BARCT limits are made through an analytical process that is comprised of assessing South Coast AQMD and other agency regulatory requirements and emission limits, researching control options and effectiveness of the controls, and analyzing the cost-effectiveness of the control options. Emission levels are established based on their achievability, source test results, and vendor guarantees.

Throughout the BARCT determination process, rule-specific working group meetings are held to present staff's findings regarding the feasibility and cost-effectiveness of implementing BARCT. Working group meetings are open to the public and provide an opportunity for stakeholders to participate in the rule development process. During the public process, cost assumptions are discussed through the Working Group to solicit comments. Cost-effectiveness and incremental cost-effectiveness, if applicable, are discussed and presented during the rule working group meetings, presented at the Public Workshop, included in the Draft Staff Report, and included in the Board Letter for the adoption hearing. The socioeconomic analysis uses the cost data to estimate regional and industry-specific socioeconomic impacts from the proposed rule and its proposed controls, while the California Environmental Quality Act (CEQA) analysis provides the environmental impacts that result from implementing a rule.

Staff have identified a number of rules that need amendments and new rules that need to be adopted to support the transitioning of NOx sources out of RECLAIM. The following eleven Landing Rules were amended or adopted by the Governing Board to facilitate the transition:

- Rule 1100 – Implementation Schedule for NOx Facilities,
- Rule 1110.2 – Emissions from Gaseous - and Liquid-Fueled Engines,
- Rule 1117 – Emissions from Container Glass Melting and Sodium Silicate Furnaces
- Rule 1118.1 -- Control of Emissions from Non-Refinery Flares,
- Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines,
- Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities,
- Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters,
- Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters,
- Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters,
- Rule 2001 – Applicability, and
- Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx).

A summary of the Landing Rules are provided in Table 3-3. The status of the remaining Landing Rules to be amended or adopted are listed in Table 3-3 as either "In Progress" or "To Be Determined". Further information regarding the specifics of each rule can be found at http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules. Details on past amended or

adopted rules can be found by entering the amendment or adoption date of a given rule at http://www.aqmd.gov/ home/news-events/meeting-agendas-minutes and down-loading the relevant rule board agenda item.

Table 3-3
Summary of Landing Rules

Rule(s)	Focus Area	Description
218, 218.2 and 218.3	Continuous Emission Monitoring / Continuous Emission Monitoring Performance Specifications *Applicability:* equipment that require CEMS at non-RECLAIM facilities.	Revises provisions for continuous emission monitoring systems for facilities exiting RECLAIM. *(In Progress – 1st Qtr. 2021)*
1100	Implementation Schedule for NOx Facilities *Applicability*: equipment specified in Rules 1146, 1146.1, and 1110.2.	Establishes implementation schedule for RECLAIM and prior RECLAIM sources to meet applicable provisions of Landing Rules: • Implementation schedule for equipment meeting applicability under Rules 1146 and 1146.1 *(Adopted December 7, 2018)* • Implementation schedule for equipment meeting applicability under Rule 1110.2 *(Amended November 1, 2019)* • Revises definition of "industry-specific category" to reflect the intent to exempt equipment at refineries from the NOx emission limits or permit submission deadlines specified in Rules 1100, 1110.2, 1146, and 1146, that will be regulated in an industry-specific rule for refineries and related industries under Proposed Rule 1109.1 *(Amended January 10, 2020)* This rule will be amended as necessary as a companion rule to a Landing Rule as it is amended or adopted.
1109 *(to be rescinded)* and 1109.1	Refinery and Related Industries Equipment *Applicability:* equipment emitting NOx at refineries and related industries.	Establishes NOx emission limits to reflect BARCT for equipment located at a refinery. *(In Progress – 2nd Qtr. 2021)*

Rule(s)	Focus Area	Description
1110.2	Emissions from Gaseous - and Liquid-Fueled Engines *Applicability:* all stationary and portable engines over 50 rated brake horsepower.	1. Maintains existing BARCT levels for NOx, VOC, and CO emission limits, and allows: • Interim alternate emission limits for compressor gas lean-burn engines, • Concentration based limits for linear generator technology, and • Interim VOC based emission limits for certain electricity generating engines. 2. Specifies emission averaging time. 3. Includes additional monitoring requirements for engines at former RECLAIM facilities. 4. Revises exemptions for: • Diesel engines operated at remote radio transmission sites, • Tuning of an engine and/or associated emission control equipment, • Replacement of catalytic equipment as a major repair, and • Diesel engines powering cranes located on offshore platforms, provided specific criteria are met. *(Amended November 1, 2019)* *[Estimated emission reductions, 0.29 tons of NOx per day.]*
1117	Emissions from Container Glass Melting and Sodium Silicate Furnaces *Applicability:* container glass melting and sodium silicate furnaces.	1. Updates NOx and SOx emission limits to reflect current BARCT for container glass melting and sodium silicate furnaces: • 0.75 lb. of NOx per ton of glass pulled on a rolling 30-day average for container glass melting furnaces, • 0.50 lb. of NOx per ton of product pulled on a rolling 30-day average for sodium silicate furnaces, as well as • 1.1 lbs. of SOx per ton of material pulled on a rolling 30-day average for both container glass melting and sodium silicate furnaces 2. Revises monitoring, reporting, and recordkeeping requirements. 3. Includes provisions to reduce emissions for idling, startup, and shutdown of furnaces. 4. Includes NOx emission limits for auxiliary combustion equipment associated with container glass melting operations: • 30 ppmvd NOx at 3% O2 or 0.036 lb. per MMBTU of heat input. *(Amended June 5, 2020)* *[Estimated emission reductions, 0.57 tons of NOx per day, and 0 tons of SOx per day (since the rule does not impose a more stringent SOx limit than is already required to be achieved.]*

Rule(s)	Focus Area	Description
1118.1	Control of Emissions from Non-Refinery Flares *Applicability:* flares located at landfills, wastewater treatment plants, oil and gas production facilities, organic liquid loading stations, tank farms, and other locations that are not a refinery.	1. Establishes NOx, VOC, and CO emission limits to reflect current BARCT for new, replaced, or relocated flares. 2. Establishes industry-specific capacity thresholds for existing flares. Flares that exceed the applicable capacity threshold in two consecutive calendar years shall either be modified to comply with the established limit or implement plan to reduce the amount of gas flaring. 3. Establishes requirements for source testing, monitoring, reporting, and recordkeeping. 4. Provides exemptions for low-use and low-emitting flares. *(Adopted January 4, 2019)* *[Estimated emission reductions: 0.18 tons of NOx per day, and 0.014 tons of VOC per day.]*
1134	Emissions of Oxides of Nitrogen from Stationary Gas Turbines *Applicability:* stationary gas turbines, 0.3 MW and larger, except turbines located at electricity generating facilities, refineries or public owned treatment works, or fueled by landfill gas.	1. Updates NOx and ammonia emission limits to reflect current BARCT, effective beginning January 1, 2024. 2. Provides implementation timeframes to facilitate transition. • Alternative compliance date for compressor gas turbines, provided the facility demonstrates 25% or more NOx emission reductions beginning December 31, 2023. • Extension of up to 36 months to comply with ammonia emission limits, provided an ammonia continuous emissions monitoring system is installed and the turbine operates less than one thousand hours per year. 3. Revises monitoring, reporting, and recordkeeping requirements 4. Provides exemptions for units that are shown to be not cost effective for retrofit or replacement: • Low-use turbines, and • Turbines achieving emissions close to the established limit. *(Amended April 5, 2019)* *[Estimated emission reductions: 2.8 tons of NOx per day.]*

Rule(s)	Focus Area	Description
1135	Emissions of Oxides of Nitrogen from Electricity Generating Facilities *Applicability:* electric generating units at electricity generating facilities.	1. Updates emission limits to reflect current BARCT: • NOx and ammonia emission limits for boilers and gas turbines, and • NOx, ammonia, carbon monoxide, volatile organic compounds, and particulate matter for internal combustion engines. 2. Revises monitoring, reporting, and recordkeeping requirements. 3. Provides exemptions for units that are shown to be not cost effective for retrofit: • Low-use units, • Units achieving emissions close to the established limits, and • Units required to be shut down in the near term. *(Amended November 2, 2018)* *[Estimated emission reductions: 1.7 tons of NOx per day.]*

Rule(s)	Focus Area	Description
1146, 1146.1, and 1146.2	Emissions of Oxides of Nitrogen from: Rule 1146 - Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters *Applicability:* boilers, process heaters, and steam generators that are greater than or equal to 5 MMBtu/hr. Rule 1146.1 - Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters *Applicability:* boilers, process heaters, and steam generators that are greater than 2 MMBtu/hr or and less than 5 MMBtu/hr. Rule 1146.2 - Large Water Heaters and Small Boilers and Process Heaters *Applicability:* boilers, process heaters, and steam generators that are greater than 400,000 and less than or equal to 2 MMBtu/hr.	1. For Rule 1146 and 1146.1 facilities: • Updates emission limits to reflect current BARCT. ➢ NOx and ammonia emission limits for boilers, steam generators, and heaters • Specifies compliance schedule in Rule 1100. 2. For Rule 1146.2 units: • Comply with the 30 ppm limit by December 31, 2023, if a technology assessment (to be completed by January 1, 2022) determines that the NOx emission limits specified in Rule 1146.2 still represent BARCT. *(Amended December 7, 2018)* *[Estimated emission reductions: 0.31 tons of NOx per day.]* 1. For Rule 1146 facilities: • Removes ammonia slip limit which is currently addressed under Regulation XIII. *(Amended December 4, 2020)* *[Estimated emission reductions: 0 tons of NOx per day.]*
1147	NOx Reductions from Miscellaneous Sources *Applicability:* miscellaneous equipment that require a District permit but not regulated by other Regulation XI rules.	1. Removes equipment that will be regulated under Proposed Rules 1147.1 and 1147.2. 2. Evaluates existing NOx emission limits. *(In Progress – 2nd Qtr. 2021)*

Rule(s)	Focus Area	Description
1147.1 *(to be incorporated into 1147)*	NOx Reductions for Equipment at Aggregate Facilities *Applicability:* equipment at aggregate facilities.	Establishes NOx emission limits to reflect current BARCT. *(In Progress – 2nd Qtr. 2021)*
1147.2 *(to be renamed as 1147.1)*	NOx Reductions from Metal Melting and Heating Furnaces *Applicability:* metal melting and heating- furnaces.	Establishes NOx emission limits to reflect current BARCT. *(In Progress – 3rd Qtr. 2021)*
1153.1	Emissions of Oxides of Nitrogen from Commercial Food Ovens *Applicability:* commercial food ovens.	Updates NOx emission limits to reflect current BARCT. *(To Be Determined)*
1159.1	Control of NOx Emissions from Nitric Acid Processing Tanks *Applicability:* nitric acid processing tanks	Updates NOx emission limits to reflect current BARCT. *(In Progress – 4th Qtr. 2021)*
2001	Applicability *Applicability:* facilities operating under the RECLAIM program	1. Prevents new NOx RECLAIM facility inclusions as of January 5, 2018. *(Amended January 5, 2018)* 2. Allows facilities to opt-out of RECLAIM, if certain conditions are met. *(Amended October 5, 2018)* 3. Removes the opt-out provision for RECLAIM facilities until all rules associated with the transition to a command-and-control regulatory structure have been adopted and approved into the SIP. *(Amended July 12, 2019)*

Rule(s)	Focus Area	Description
2002	Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx) *Applicability:* facilities operating under the RECLAIM program.	1. Establishes NOx RECLAIM facility exit notification requirements. 2. Requires exited facilities to provide emission reduction credits to offset any NOx emissions increases, until New Source Review provisions governing NOx emission calculations and offsets are amended. 3. Prohibits exited facilities from selling or transferring future compliance year RECLAIM Trading Credits. *(Amended January 5, 2018)* 1. Provides option for facilities that received an initial determination notification to stay in RECLAIM for a limited time. 2. Establishes requirement for facilities issued a final determination to be transitioned out of the NOx RECLAIM program to provide emission reduction credits to offset any NOx emissions increases, calculated pursuant to Rule 1306, notwithstanding the exemptions contained in Rule 1304 and requirements in Rule 1309.1 until New Source Review provisions governing NOx emission calculations and offsets are amended to address former RECLAIM sources. *(Amended October 5, 2018)*
2005	New Source Review for RECLAIM *Applicability:* facilities operating under the RECLAIM program	1. Allows for New Source Review provisions to address facilities that are transitioning from RECLAIM to command-and-control. 2. Amendments to Regulation XIII may be needed to address New Source Review provisions for facilities that transition out of RECLAIM. *(To Be Determined)*

Monthly working group meetings continue to be held, as necessary, to further discuss steps for transitioning the remaining RECLAIM facilities to a command-and-control structure, and to develop necessary rule amendments to implement BARCT for the exiting RECLAIM facilities. Since the RECLAIM universe includes many different industries, separate working groups have been formed to address and develop these different BARCT Landing Rules. Completion of the development efforts for the remaining Landing Rules is now targeted for the fourth quarter in 2021. The current plan is to transition NOx RECLAIM sources after the New Source Review provisions are addressed by a rule amendment and all NOx Landing Rules have been adopted and approved by EPA into the SIP.

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 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 in writing by South Coast AQMD. 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 South Coast AQMD 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, proportional to each facility's contribution to the total amount of 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 2019 found that no facilities requested to exclude breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2019, no additional RTCs are required to offset breakdown emissions pursuant to Rule 2015(d)(3).

Table 3-4
Breakdown Emission Comparison for Compliance Year 2019

Pollutant	Compliance Year 2019 Unused RTCs (tons)	Unmitigated Breakdown Emissions[1] (tons)	Remaining Compliance Year 2019 RTCs (tons)
NOx	1,646	0	1,646
SOx	520	0	520

[1] Data for unmitigated breakdown emissions (not counted against Allocation) as reported under APEP reports.

Impact of Changing Universe

In general, 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. Facilities exiting the RECLAIM program result in their emissions not being accounted and therefore diminish the

demand of RTCs while the facility operator may retain their RTCs[4]. On the other hand, facilities entering the program add to the accounting of emissions and increase the demand of RTCs while they may or may not be issued Allocations to account for their historical activities[5]. However, the Governing Board amended Rule 2001 on January 5, 2018 to preclude any facility from entering the RECLAIM program and amended Rule 2001 on July 12, 2019 to remove the opt-out provision so that facilities cannot exit RECLAIM.

As discussed in Chapter 1, during Compliance Year 2019, no facilities were included or excluded from the NOx or SOx universes, and seven facilities (seven NOx-only facilities and no NOx and SOx facilities) shut down. Compliance Year 2019 NOx and SOx audited emissions and initial Compliance Year 2019 allocations for facilities that were shut down during Compliance Year 2019 are summarized in Tables 3-5 and 3-6.

Table 3-5
NOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2019 NOx Emissions (tons)	Initial Compliance Year 2019 NOx Allocations (tons)
Shutdown Facilities	5.62	16.3
Excluded Facilities	Not applicable	Not applicable
RECLAIM Universe	6,597	8,243

Table 3-6
SOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2019 SOx Emissions (tons)	Initial Compliance Year 2019 SOx Allocations (tons)
Shutdown Facilities	Not applicable	Not applicable
Excluded Facilities	Not applicable	Not applicable
RECLAIM Universe	1,701	2,221

Backstop Provisions

Rule 2015 requires that South Coast AQMD review the RECLAIM program and implement necessary measures to amend it whenever aggregate emissions exceed the aggregate allocations by five percent or more. Compliance Year 2019 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. Therefore, there is no need to initiate a program review due to emissions exceeding aggregate allocation in Compliance Year 2019.

[4] Rule 2002(i) as amended in October 2016, requires the reduction of the RTC holdings of a shutdown facility that is listed in Tables 7 or 8 of Rule 2002 by an amount equivalent to the emissions above the most stringent BARCT level (see discussion in Chapter 2).

[5] When an existing facility enters the program, it is issued RTC allocations based on its operational history pursuant to the methodology prescribed in Rule 2002.

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 2019, a total of three NOx RECLAIM facilities had NSR NOx emission increases, and no SOx RECLAIM facilities had an NSR SOx emission increase 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 2019, RECLAIM demonstrated federal equivalency with a programmatic NOx offset ratio of 1,504-to-1 based on the compliance year's total unused allocations and total NSR emission increases for NOx. There were no SOx NSR emission increases that resulted from starting operations of new or modified permitted sources during the compliance year. 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 (Table 3-2 and Figure 3-2), there was a surplus of SOx RTCs during Compliance Year 2019. Therefore, RECLAIM more than complied with the federally-required SOx offset ratio and further quantification of the SOx offset ratio is unnecessary. Also, the NNI is satisfied by the program's 1-to-1 offset ratio. 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) for major sources. The same BACT guidelines are used to determine BACT applicable 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 operations[1].

Title 42, United States Code §7511a, paragraph (e), requires major sources in extreme non-attainment areas to offset emission increases of extreme non-attainment 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. South Coast AQMD 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 SO_2 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 SO_2 standards, SOx is a precursor to PM2.5. The Basin is in Serious Non-attainment with 2006 Federal 24-hours standard and 2012 Federal annual standard for PM2.5. The applicable offset ratio for PM2.5 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 nonattainment 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. South Coast AQMD uses the same BACT guidelines in applying BACT to both 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.

[1] Federal NSR applies to federal major sources (sources with the potential to emit at least 10 tons of NOx or 70 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).

The same rule also requires all new RECLAIM facilities[2] and all other RECLAIM 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 as explained earlier. This annual program audit report assesses NSR permitting activities for Compliance Year 2019 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 2019 shows that RECLAIM facilities were able to expand and modify their operations while complying with NSR requirements. During Compliance Year 2019, a total of three NOx RECLAIM facilities (two in Cycle 1 and one in Cycle 2) were issued permits to operate, which resulted in a total of 1.095 tons per year of NOx emission increases from starting operations of new or modified sources. There were no SOx NSR emission increases that resulted from starting operations of new or modified permitted sources. These emission increases were calculated pursuant to Rule 2005(d) – Emission Increase. As in previous years, there were adequate unused RTCs (NOx: 1,646 tons, SOx: 520 tons; see Chapter 3) in the RECLAIM universe available for use to offset 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

[2] New facilities are facilities that received all South Coast AQMD Permits to Construct on or after October 15, 1993.

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 potential RECLAIM offset ratios are expressed by the following formula:

$$\text{Offset Ratio} = \left(1 + \frac{\text{compliance year's total unused allocations}}{\text{total NSR emission increases}}\right)\text{-to-1}$$

As stated in the previous section under the title of "NSR Activity", permits to operate issued to three RECLAIM facilities resulted in 1.095 tons of NOx emission increase pursuant to Rule 2005(d). Additionally, as identified in Table 3-1 (Annual NOx Emissions for Compliance Years 1994 through 2019), 1,646 tons of Compliance Year 2019 NOx RTCs remained unused. Therefore, the Compliance Year 2019 NOx programmatic offset ratio calculated from this methodology is 1,504-to-1 as shown below:

$$\text{NOx Offset Ratio} = \left(1 + \frac{1{,}646 \text{ tons}}{1.095 \text{ tons}}\right)\text{-to-1}$$

$$= 1{,}504\text{-to-1}$$

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. Since RECLAIM does not dedicate all unused RTCs to NSR uses in any given year, it does not actually provide a 1,504-to-1 offset ratio; but this analysis does demonstrate that RECLAIM provides more than enough unused RTCs to account for the 1.2-to-1 required offset ratio. 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 520 tons of excess (unused) SOx RTCs for Compliance Year 2019. Since there were no SOx emission increases that resulted from starting operations of new or modified permitted sources during the compliance year, there is certainty that both the federally required SOx offset ratio and the California NNI requirement for SOx were satisfied.

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 2019 shows that RECLAIM is in compliance with both state NNI and federal NSR requirements. South Coast AQMD 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 2019, two RECLAIM facilities were subject to the 40-ton modeling requirement; two facilities for NOx emissions, and no facilities for SOx emissions.

This modeling is performed with an USEPA approved air dispersion model to assess the impact of a facility's 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 South Coast AQMD'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 facility's 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).

One NOx facility had initial NOx allocations in 1994 and exceeded their initial allocations by more than 40 tons in Compliance Year 2019. The other NOx

facility had no initial allocation in 1994 and had NOx emissions greater than 40 tons in Compliance Year 2019. Both facilities submitted modeling that demonstrated that NOx emissions from their major sources during 2019 will not cause an exceedance of any state or federal NO_2 AAQS.

CHAPTER 5
COMPLIANCE

Summary

*Based on South Coast AQMD Compliance Year 2019 audit results, 247 of the 259 (95%) NOx RECLAIM facilities complied with their NOx allocations, and 31 of the 32 SOx facilities (97%) complied with their SOx allocations based on South Coast AQMD audit results. So, thirteen facilities exceeded their allocations (12 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocation). The 12 facilities that exceeded their NOx allocations had aggregate NOx emissions of 339.9 tons and did not have adequate allocations to offset 213.6 tons (or 62.8%) of their combined emissions. The facility that exceeded its SOx allocations had total SOx emissions of 1.22 tons and did not have adequate allocations to offset 0.27 tons (or 22.1%). The NOx and SOx exceedance amounts are relatively small compared to the overall NOx and SOx allocations for Compliance Year 2019 (2.60% of total NOx allocations and 0.01% of total SOx allocations). The exceedances from these facilities did not impact the overall RECLAIM emission reduction goals. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2019 (*i.e.*, aggregate emissions for all RECLAIM facilities were well below aggregate allocations). 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 South Coast AQMD's determination that the facilities exceeded their Compliance Year 2019 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 are 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 subsequently included in the RECLAIM program, each RECLAIM facility is issued an annual allocation for each compliance year pursuant to the methodology prescribed in Rule 2002. A facility in existence prior to October 1993 is issued allocations by South Coast AQMD 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 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 Annual Permit Emissions Program (APEP) report, respectively.

Compliance Audit

Since the beginning of the program, South Coast AQMD staff has conducted annual audits of each RECLAIM facility’s emission reports to ensure their integrity and reliability. All facilities that submitted emission reports during a compliance year are subject to compliance audits, even for those that are shutdown or have a change of operator. This results in additional facility audits over the number of active facilities in the universe at the end of a compliance year. For Compliance Year 2019, a total of 259 facility audits were completed. The audit process also 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 South Coast AQMD or submitted in QCERs and APEP reports. For Compliance

Year 2019, these inspections revealed that some facilities did not obtain or record valid monitoring data, failed to submit emission reports when due, made errors in quantifying their emissions (*e.g.*, arithmetic errors), used incorrect emission and 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 failed to properly apply MDP. Appropriate compliance actions are 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 13 RECLAIM facilities failed to reconcile their emissions (12 NOx-only facilities and one NOx-and-SOx facility that exceeded its SOx allocations). Seven of these12 facilities (six NOx-only facilities and one NOx-and-SOx facility) failed to acquire adequate RTCs to offset their reported emissions. The remaining six NOx-only facilities exceeded allocations based on their audited emissions. The list of facilities that failed to reconcile their emissions during Compliance Year 2019 is provided in Appendix D.

Based on audit findings, eight NOx-only facilities and zero NOx-and-SOx facilities were found to have under-reported their emissions and didn't hold sufficient RTCs to reconcile their audited emissions. Among the eight facilities found to have under-reported their emissions, the reasons for the under-reporting include one or more of the following causes:

- mathematical error,
- misread fuel meter,
- failed to report emissions for all NOx sources, and
- failure to properly apply missing data procedures.

Overall, the Compliance Year 2019 allocation compliance rates for facilities are 95% (247 out of 259 facilities) for NOx RECLAIM and 97% (31 out of 32 facilities) for SOx RECLAIM[1]. For purposes of comparison, the allocation compliance rates for Compliance Year 2018 were 94% and 97% for NOx and SOx RECLAIM facilities, respectively. In Compliance Year 2019, the 12 facilities that had NOx emissions in excess of their individual NOx allocations had 339.9 tons of NOx emissions and didn't have adequate RTCs to cover 213.6 of those tons (or 62.8% of their total emissions). The SOx facility that exceeded its SOx allocation had total SOx emissions of 1.22 tons and didn't have adequate allocations to offset 0.27 tons (or 22.1% of their total emissions). The NOx and SOx exceedance amounts are relatively small compared to the overall allocations for Compliance Year 2019 (2.60% of aggregate NOx allocations and 0.01% of aggregate SOx allocations). Pursuant to Rule 2010(b)(1)(A), all 12 facilities had their respective NOx or SOx Allocation exceedances deducted from their annual

[1] Compliance rates for both NOx and SOx are based on 259 NOx and 32 SOx completed audits, respectively.

emissions allocations for the compliance year subsequent to South Coast AQMD's determination that the facilities exceeded their Compliance Year 2019 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"[2] 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 emissions[3].

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, 93 NOx facilities and 16 SOx facilities used MDP in reporting portions of their annual emissions during Compliance Year 2019. In terms of mass emissions, 5.4% of the total reported NOx emissions and 9.5% of the total reported SOx emissions in the APEP reports were calculated using MDP for Compliance Year 2019. 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).

[2] Based on uncontrolled emission factor at maximum rated capacity of the source and 24 hours per day operation.

[3] Based on averaged emissions during periods before and after the period for which data is not available.

Table 5-1
MDP Impact on Annual Emissions

Year	Percent of Reported Emissions Using Substitute Data*	
	NOx	SOx
1995	23.0% (65 ; 6,070)	40.0% (12 ; 3,403)
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)
2015	6.9% (98 ; 502)	10.9% (14 ; 229)
2016	3.9% (91 ; 288)	6.2% (14 ; 125)
2017	3.8% (92 ; 273)	6.3% (15 ; 126)
2018	3.7% (90 ; 252)	7.0% (16 ; 150)
2019	5.4% (93 ; 343)	9.5% (16 ; 161)

* Numbers in parentheses that are separated by a semicolon 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, 93 facilities reported NOx emissions using MDP in Compliance Year 2019. Even though the number of facilities is higher than in 1995, the percentage of emissions reported using MDP during Compliance Year 2019 is much lower than it was in 1995 (5% compared to 23%). Additionally, in terms of quantity, NOx emissions determined by the use of MDP in Compliance Year 2019 were about 6% of those in Compliance Year 1995 (343 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 5% of reported NOx annual emissions were calculated using MDP in Compliance Year 2019. 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 5% 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 2019, a significant portion of NOx MDP emissions data (75%) and of SOx MDP emissions data (44%) 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 South Coast AQMD to be equivalent to CEMS in relative accuracy, reliability, reproducibility, and timeliness.

For Compliance Year 2019, 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, respectively, reported emissions revealed that 77% of all RECLAIM NOx emissions and 96% 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 South Coast

AQMD'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 against 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. In addition, the RATAs reveal 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: 1) the CEMS bias (how much it differs from the reference method on the average), and 2) the CEMS confidence coefficient (how variable that bias or average difference is).

Tables 5-3 and 5-4 summarize the 2019 and 2020 calendar years' passing rates, respectively, for submitted 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 2019 and 2020 passing rates are calculated from RATA data submitted before January 10, 2020 and January 10, 2021, 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 2019[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total[2] Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx[3]	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
338	100	91	100	21	100	54	100	306	100	320	100	90	100

[1] The calculation of passing rates includes all RATAs submitted by January 10, 2020.

[2] Includes Cylinder Gas Audit (CGA) tests.

[3] Does not include SOx emissions calculated from total sulfur analyzers.

Table 5-4
Passing Rates Based on RATAs of Certified CEMS in 2020[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total[2] Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx[3]	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
399	100	104	100	20	100	73	100	383	99.7	374	100	90	100

[1] The calculation of passing includes all RATAs submitted by January 10, 2021.

[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/SO_2 concentration, stack flow rate, and mass emissions were at or near 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 South Coast AQMD. An electronic reporting system, known as Electronic Data Reporting (EDR), allows 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 South Coast AQMD and also expedites reviews. In calendar year 2020, 98% of RATA results 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 non-resettable 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 source-tested, 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 fuel-based 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 South Coast AQMD, and to help automate compliance tracking. Under RECLAIM, facilities report their emissions electronically on a per device basis to South Coast AQMD's Central Station computer as follows:

- Major sources must use a Remote Terminal Unit (RTU) to telecommunicate emission data to South Coast AQMD'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 South Coast AQMD'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 South Coast AQMD'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 South Coast AQMD.

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 South Coast AQMD 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.

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. South Coast AQMD staff is not able to independently verify the accuracy of the facility reported job impact information.*

According to the Compliance Year 2019 employment survey data gathered from APEP reports, RECLAIM facilities reported a net loss of 4,167 jobs, representing 4.0% of their total employment. A comparison of reported job impacts between Cycle 1 and Cycle 2 facilities suggests that the coronavirus (COVID-19) global pandemic affected Cycle 2 facility job losses. One RECLAIM facility cited RECLAIM as a factor contributing to the addition of one job during Compliance Year 2019. No facility reported job losses due to RECLAIM, during Compliance Year 2019.

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 2019 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 2019 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 2019.

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 South Coast AQMD for Compliance Year 2019 and clarifying information collected by South Coast AQMD staff. South Coast AQMD 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 2019 APEP reports and follow-up contacts with facilities. A total of 122 facilities reported 7,430 job gains, while 130 facilities reported a total of 11,597 job losses. Net job losses were reported in all of the three categories: sales of products (137), non-manufacturing (2,481), and manufacturing (1,549). Table 6-1 shows a total net loss of 4,167 jobs, which represents a net decrease of 4.0% at RECLAIM facilities during Compliance Year 2019. A comparison of reported job impacts between Cycle 1 and Cycle 2 facilities during Compliance Year 2019 shows that Cycle 1 facilities (January 1, 2019 – December 31, 2019) reported an overall job gain of 0.35% while Cycle 2 facilities (July 1, 2019 – June 30, 2020) reported an overall job loss of 7%, coinciding with the outbreak of the novel coronavirus (COVID-19) global pandemic and supporting the widely reported effects on employment as the reason for Cycle 2 job losses. This trend in employment numbers is also suggested in the 2020 employment data for the State of California.[1]

Table 6-1
Job Impacts at RECLAIM Facilities for Compliance Year 2019

Description	Manufacture	Sales of Products	Non-Manufacture	Total*
Initial Jobs	50,354	655	53,098	104,107
Overall Job Gain	2,508	75	4,847	7,430
Overall Job Loss	4,057	212	7,328	11,597
Final Jobs	48,805	518	50,617	99,940
Net Job Change	-1,549	-137	-2,481	-4,167
Percent (%) Job Change	-3.08%	-20.92%	-4.67%	-4.00%
Facilities Reporting Job Gains	83	21	75	122
Facilities Reporting Job Losses	93	28	78	130

* 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 for two of the seven RECLAIM facilities that ceased operations in Compliance Year 2019, as listed in Appendix C, are included in Table 6-1. The other five facilities did not specify a change in the number of jobs for Compliance Year 2019. Of the seven facilities that ceased operations, three facilities cited that they were no longer financially able to competitively operate, one relocated outside of the South Coast AQMD, two facilities were sold and all equipment was removed, and one facility underwent a corporate merger and consolidation. According to their APEP reports, the shutdown of these seven facilities led to a total loss of 141 jobs (117 manufacturing jobs, 0 sales jobs, and 24 non-manufacturing jobs).

[1] The 2020 California employment data was obtained from the State of California Employment Development Department website at: https://www.labormarketinfo.edd.ca.gov/geography/lmi-by-geography.html.

One RECLAIM facility attributed job gains to RECLAIM for Compliance Year 2019. The facility stated that the reason for increased jobs at their facility was because they had to hire an employee to help them with RECLAIM reporting (refer to Appendix E).

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-and-control 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 2019 NOx and SOx emissions decreased 2.1% and 20.3%, respectively, relative to Compliance Year 2018. Quarterly calendar year 2019 NOx emissions fluctuated within five percent of the mean NOx emissions for the year. Quarterly calendar year 2019 SOx emissions fluctuated within fifteen 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 2020, 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 South Coast AQMD. Those emissions reports are used to identify candidates for the Air 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, than would occur under command-and-control, because RECLAIM facilities must comply with the same toxics rules as non-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, South Coast AQMD staff evaluates per capita exposure to air pollution, toxic risk reductions, emission trends, and seasonal fluctuations in emissions. South Coast AQMD staff also generates quarterly emissions maps depicting the geographic distribution of RECLAIM emissions. These maps are generated and posted quarterly on South

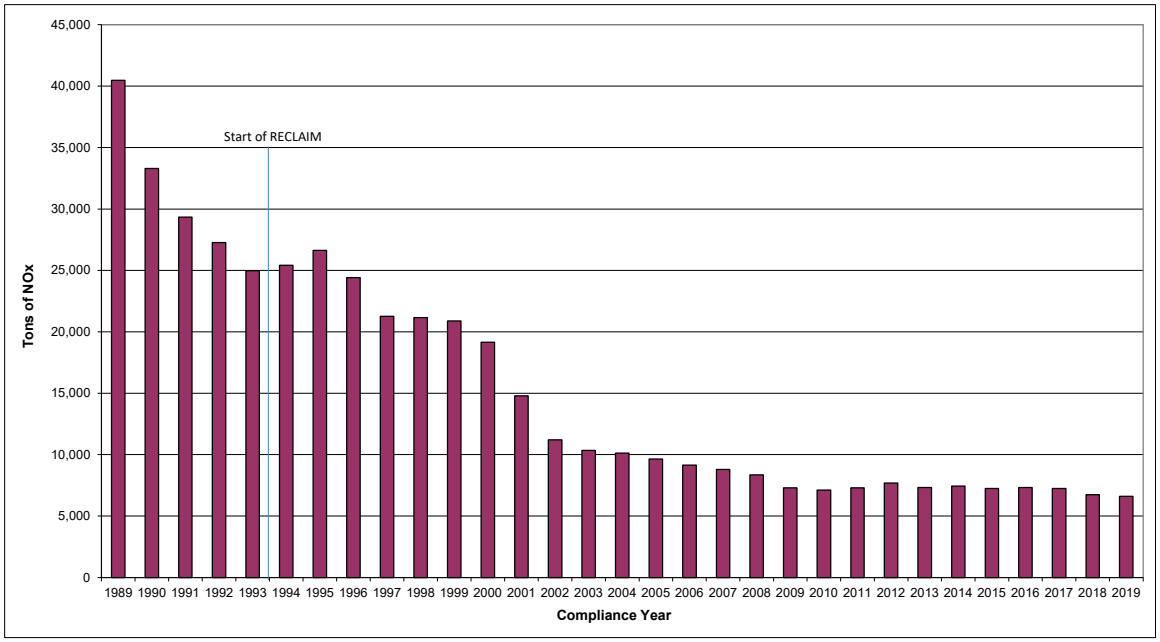
Coast AQMD's website[1], and include all the quarterly emissions maps presented in previous annual program audit reports. This chapter addresses:

- 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 since 1989, the analysis of 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.

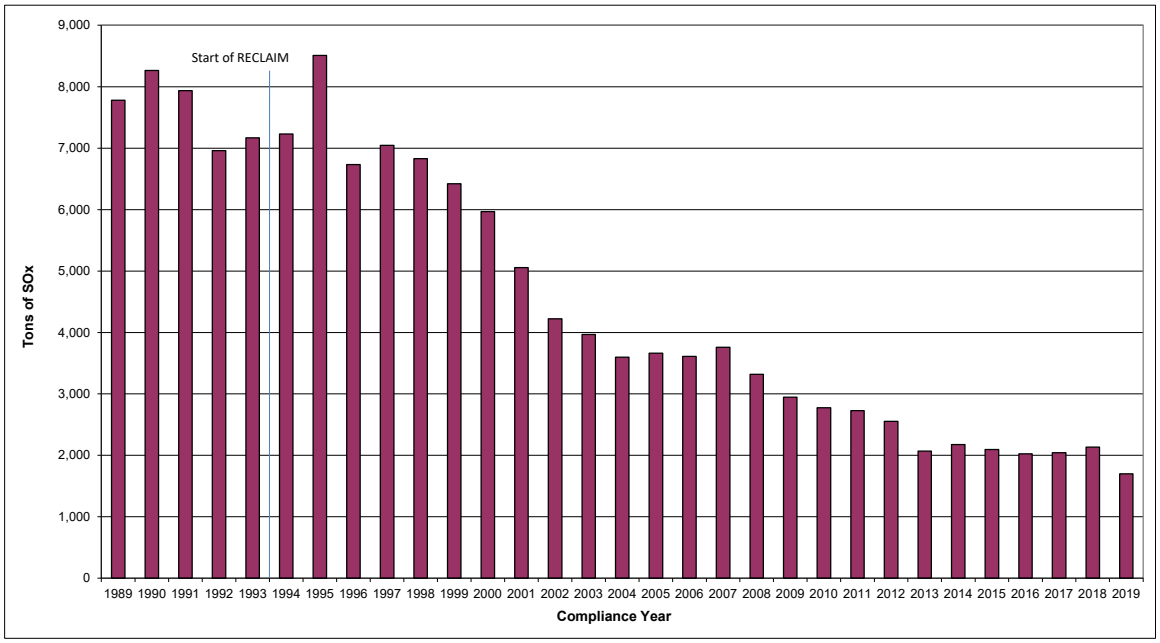
Figure 7-1
NOx Emission Trend for RECLAIM Sources



Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 NOx universe.

[1] Quarterly emission maps from 1994 to present can be found at: http://www.aqmd.gov/home/programs/business/about-reclaim/quarterly-emission-maps.

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 2010. The emissions for Compliance Year 2010 to Compliance Year 2017 fluctuated within a narrow range; all are within 5% of their average of 7,338 tons/year. The NOx emissions for Compliance Year 2018 were at a low of 6,740 tons/year, representing a 7% decrease from Compliance Year 2017. NOx emissions for Compliance Year 2019 fell even further to a record low of 6,597 tons/year, a further 2% reduction from Compliance Year 2018. Since Compliance Year 1995, annual SOx emissions have also followed a general downward trend. There were a few slight increases for a few Compliance Years when compared to each respective previous compliance year, but Compliance Year 2019 saw a large drop to a record low 1,701 tons/year, a 20% reduction compared to 2,134 tons/year in Compliance Year 2018. From 2013 to 2018, SOx emissions had been fluctuating within a narrow range (2,024 – 2,176 tons/year or < ± 3% of the range's mean). As discussed in Chapter 3, NOx and SOx emissions are much lower than the programmatic goals (see Figures 3-1 and 3-2).

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, South Coast AQMD staff performed a two-part analysis of the quarterly variation in RECLAIM emissions:

1. In the first part, staff qualitatively compared the quarterly variation in Compliance Year 2019 RECLAIM emissions to the quarterly variation in emissions from the RECLAIM universe prior to the implementation of RECLAIM.
2. In the second part, staff analyzed quarterly audited emissions during calendar year 2019 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.

Historically, 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.

[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.

Figure 7-3 shows the 2019 mean quarterly NOx emission level, which is the average of the aggregate audited emissions for each of the four quarters, and the 2019 audited quarterly emissions. Figure 7-4 compares the 2019 quarterly NOx emissions with the quarterly emissions from 2008 through 2018. During calendar year 2019, quarterly NOx emissions varied from four percent below the mean in the second quarter (April through June) to about four percent above the mean in the third quarter (July through September). Figure 7-4 shows that the calendar year 2019 quarterly emissions profile is consistent with previous years under RECLAIM, albeit with reduced NOx emissions. Figures 7-3 and 7-4, along with the qualitative analysis performed above show that in calendar year 2019 there has not been a significant shift in NOx emissions from the winter months to the summer months.

Figure 7-3
Calendar Year 2019 NOx Quarterly Emissions

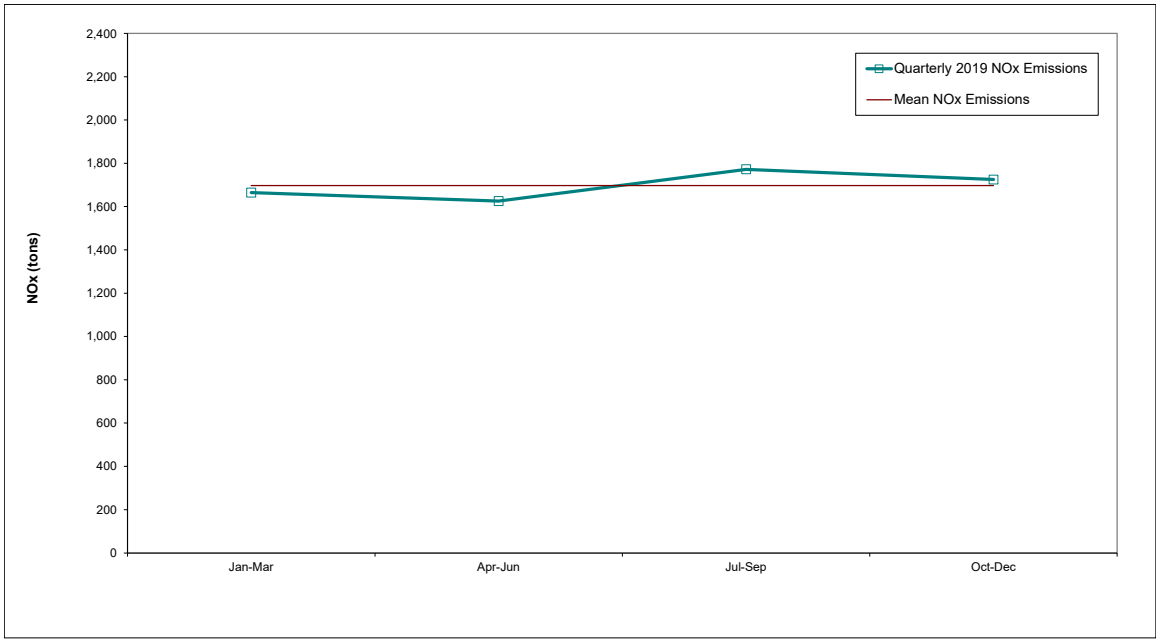
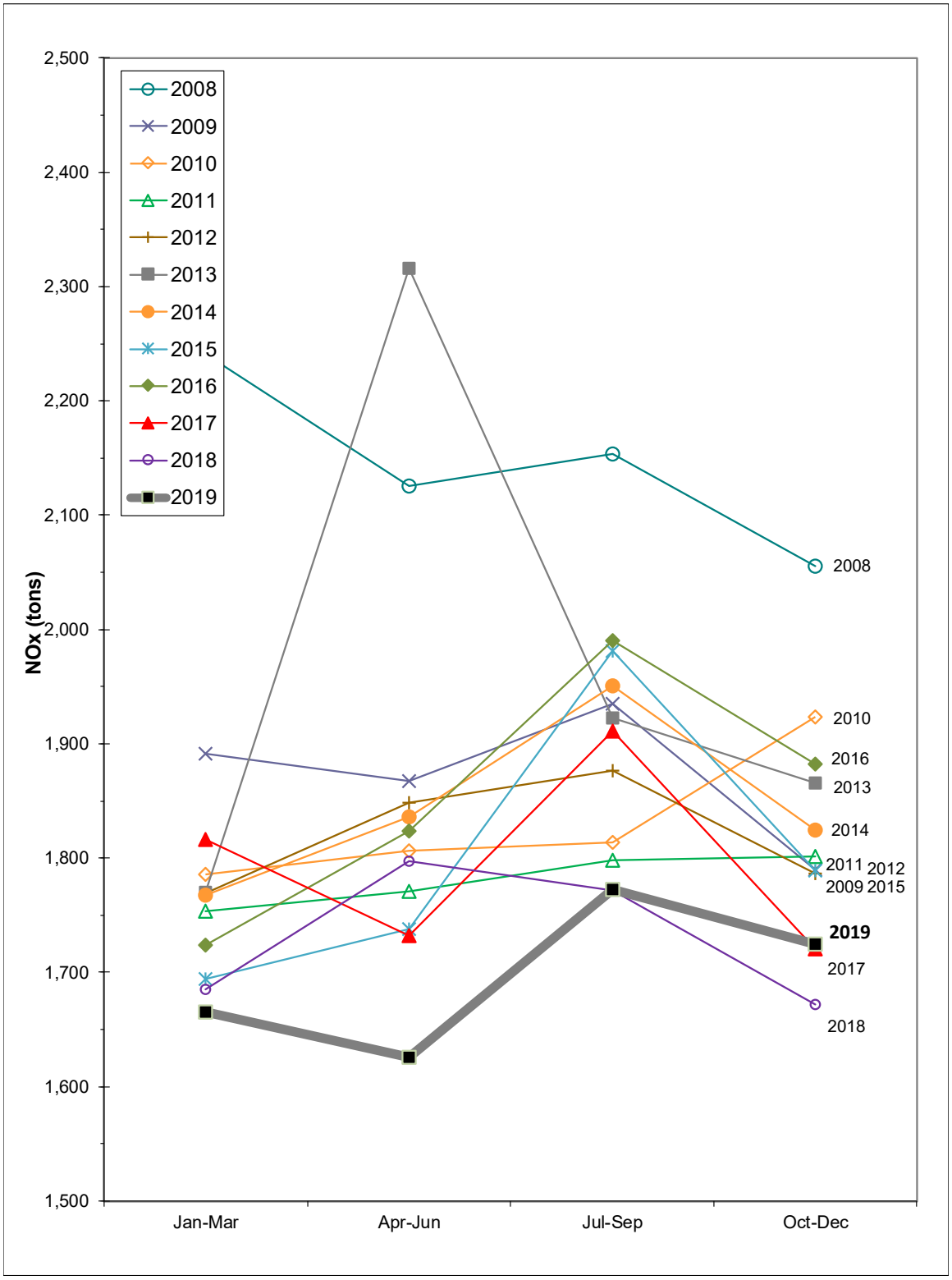


Figure 7-4
Quarterly NOx Emissions from Calendar Years 2008 through 2019



Similar to Figure 7-3 and 7-4 for NOx quarterly emissions, Figure 7-5 presents the 2019 mean quarterly SOx emissions and the 2019 audited quarterly emissions, while Figure 7-6 compares the 2019 quarterly SOx emissions with the quarterly emissions from 2008 through 2018. Figure 7-5 shows that quarterly SOx emissions during calendar year 2019 varied from eight percent below the mean in the fourth quarter (October through December) to about fourteen percent above the mean in the first quarter (January through March). Figure 7-6 shows that the calendar year 2019 quarterly emissions profile is roughly consistent with previous years under RECLAIM, with the exception of the third quarter (July through September). Even though the typical summer third quarter rise in SOx emissions did not occur, the Compliance Year 2019 emissions profile shows that this did not result in a shift of those emissions to the fourth quarter (October through December). In addition, Compliance Year 2019 SOx emissions dropped 20% with respect to Compliance Year 2018. Both Figures 7-5 and 7-6, along with the qualitative analysis performed above, show that in calendar year 2019 there was not a significant shift in SOx emissions from the winter months to the summer months.

Figure 7-5
Calendar Year 2019 SOx Quarterly Emissions

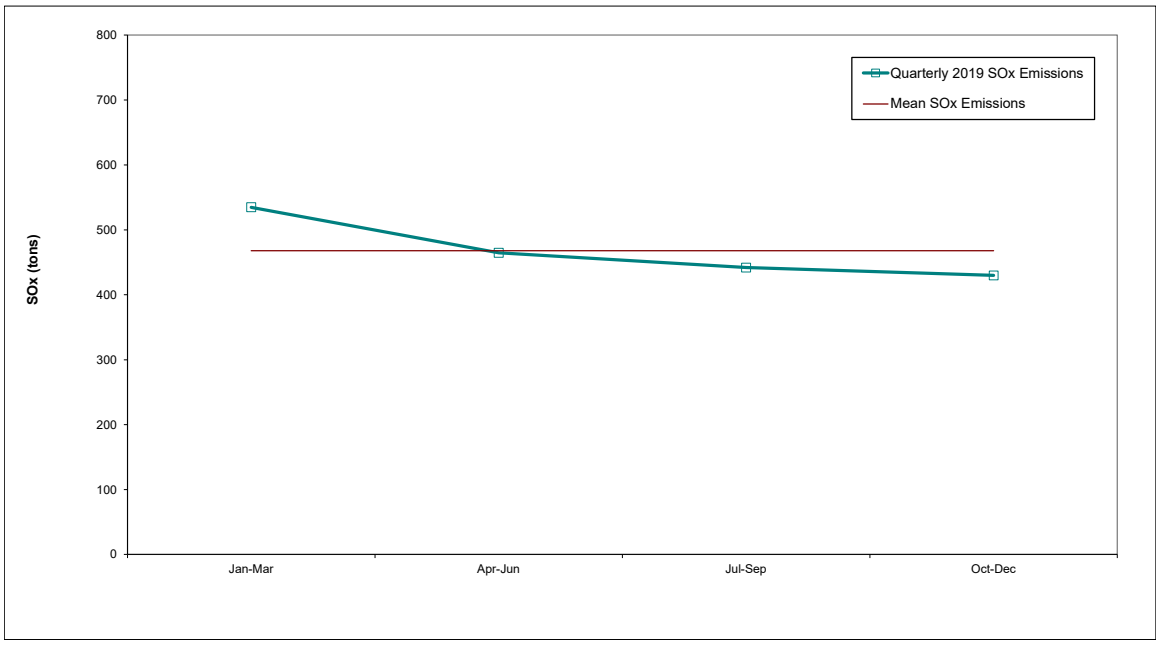
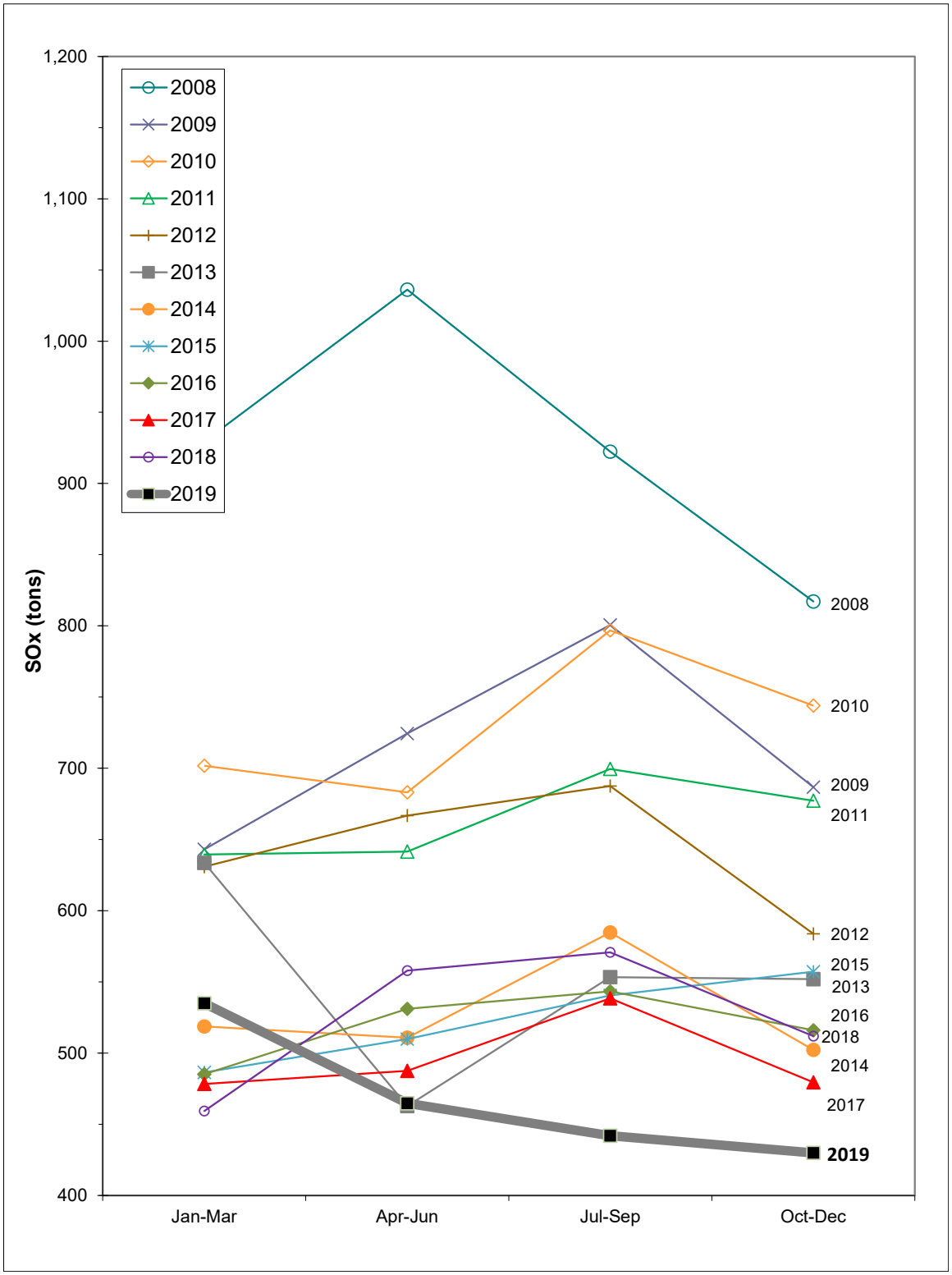


Figure 7-6
Quarterly SOx Emissions from Calendar Years 2008 through 2019



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 command-and-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 Office of Environmental Health Hazard Assessment (OEHHA), CARB is to "review all existing health-based 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 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 an 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 8-hour federal standard. Effective December 28, 2015, the 8-hour NAAQS for ozone was further reduced to 0.070 ppm, the level of the current California Ambient Air Quality Standard. Table 7-1 shows that the Basin exceeded both the newer 8-hour federal 0.07 ppm standard and the state 0.07 ppm standard by 160 days in 2020. A difference in the number of days per year the basin exceeds each standard periodically occurs due to the 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 2020 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 each standard in 2020 increased significantly when compared to 2019. Table 7-1 also shows that both the Basin Maximum 8-hour ozone concentration and 1-hour ozone concentration also increased relative to last year. The Basin Maximum 1-hour ozone concentration in 2020 is the highest it has been since 2003. There were several individual factors that contributed to this dramatic rise in ozone

concentration throughout 2020. This past year there were record high temperatures, abnormally stagnant meteorology, and an increase in NOx and VOC emissions from a historic wildfire season. Further analysis is needed to unravel the relative impacts of each contribution.

Table 7-1
Summary of Ozone Data

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
2016	85	132	105	132	0.164	0.122
2017	109	150	122	145	0.158	0.136
2018	86	141	109	141	0.125	0.142
2019	82	128	105	128	0.118	0.137
2020	132	160	145	160	0.185	0.140

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

[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

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. Relative to calendar year 2019, the 2020 per capita exposures were significantly higher for all regions. For calendar year 2020, the actual per capita exposure for the Basin was 9.07 hours, which represents an 88.7% reduction from the 1986-88 baseline level.

Table 7-2
Per Capita Exposure to Ozone above the State One-Hour Standard of 0.09 ppm (hours)

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	2.87	1.54	0.08	3.88	10.54
2010 actual	1.18	0.38	0.11	2.45	4.48
2011 actual	2.10	0.85	0.02	3.46	8.13
2012 actual	2.37	1.05	0.05	2.59	9.78
2013 actual	1.31	0.52	0.07	1.61	5.50
2014 actual	1.84	1.26	0.29	1.47	6.02
2015 actual	1.96	0.76	0.10	2.14	8.47
2016 actual	2.64	1.14	0.07	2.19	11.56
2017 actual	4.94	2.90	0.14	4.01	18.78
2018 actual	1.97	0.90	0.14	2.37	7.79
2019 actual	2.07	0.94	0.22	1.88	8.57
2020 actual	9.07	7.92	3.10	5.07	23.20
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

[1] Average over three years, 1986 through 1988.

[2] 60% of the 1986-88 baseline exposures.

[3] 50% of the 1986-88 baseline exposures.

calculations are used to determine the Basin-wide per capita exposure by summing and dividing over the whole Basin.

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.*, South Coast AQMD 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 toxic's requirements described above. Sources of fine particulates and toxic metal emissions are also subject to the above-identified regulations pertaining to toxic emissions. 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 South Coast AQMD 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 South Coast AQMD. Beginning with the FY 2000-01 reporting cycle, toxics emission reporting for the AB2588 Program was incorporated into South Coast AQMD'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 procedures[4] 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 South Coast AQMD 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 South Coast AQMD's 2019 Annual Report on the AB2588 Air Toxics "Hot Spots" program[5], staff has reviewed and approved 349 HRAs as of the end calendar of year 2019. About 95% of the facilities have cancer risks below 10 in a million and 95% of the facilities have acute and chronic non-cancer 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 South Coast AQMD discusses the health risks from the facility. South Coast AQMD has conducted such public notification meetings for 61 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, 28 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 South Coast AQMD 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, 2015[6]. Monitoring conducted at that time indicated that the basin-wide population-weighted air toxics exposure was reduced by 57% 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.

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[4] The toxics prioritization procedures can be found at: http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588.

[5] The 2019 AB2588 Annual Report can be found at: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588_annual_report_2019.pdf.

[6] The Final MATES IV Report can be found at: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf.

South Coast AQMD has initiated a MATES V study and staff began air toxics measurements at 10 fixed stations in early 2018. The advanced monitoring components also began in 2018, and included flight measurements, mobile monitoring and optical remote sensing technologies. The advanced monitoring components focus mainly on refinery emissions and potential community impacts, but also include other air pollution sources that are located close to communities. Staff has developed the emissions inventory and has been developing the modeling platform for the air toxics health risk modeling. Staff will continue to monitor and assess toxic impacts as part of future annual program audits.

APPENDIX A
RECLAIM UNIVERSE OF SOURCES

The RECLAIM universe of active sources as of the end of Compliance Year 2019 is provided below.

Facility ID	Cycle	Facility Name	Program
800088	2	3M COMPANY	NOx
185145	2	9W HALO WESTERN OPCP LP DBA ANGELICA	NOx
185146	2	9W HALO WESTERN OPCP L.P. D/B/A ANGELICA	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
187165	1	ALTAIR PARAMOUNT, LLC	NOx/SOx
800196	2	AMERICAN AIRLINES, INC,	NOx
16642	1	ANHEUSER-BUSCH LLC., (LA BREWERY)	NOx/SOx
117140	2	AOC, LLC	NOx
174406	1	ARLON GRAPHICS LLC	NOx
12155	1	ARMSTRONG FLOORING INC	NOx
183832	2	AST TEXTILE GROUP, INC.	NOx
181510	1	AVCORP COMPOSITE FABRICATION, INC	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
185801	1	BERRY PETROLEUM COMPANY, LLC	NOx
166073	1	BETA OFFSHORE	NOx
155474	2	BICENT (CALIFORNIA) MALBURG LLC	NOx
132068	1	BIMBO BAKERIES USA INC	NOx
1073	1	BORAL ROOFING LLC	NOx

Facility ID	Cycle	Facility Name	Program
150201	2	BREITBURN OPERATING LP	NOx
174544	2	BREITBURN OPERATING LP	NOx
185574	1	BRIDGE ENERGY, LLC	NOx
185575	2	BRIDGE ENERGY, LLC	NOx
185600	2	BRIDGE ENERGY, LLC	NOx
185601	2	BRIDGE ENERGY, LLC	NOx
190051	2	BRIDGE POINT LONG BEACH LLC	NOx/SOx
184958	1	BRONCS INC. DBA WEST COAST TEXTILES	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
148896	2	CALIFORNIA RESOURCES PRODUCTION CORP	NOx
148897	2	CALIFORNIA RESOURCES PRODUCTION CORP	NOx
151899	2	CALIFORNIA RESOURCES PRODUCTION CORP	NOx
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
153992	1	CANYON POWER PLANT	NOx
94930	1	CARGILL INC	NOx
22911	2	CARLTON FORGE WORKS	NOx
141555	2	CASTAIC CLAY PRODUCTS, LLC	NOx
14944	1	CENTRAL WIRE, INC.	NOx/SOx
148925	1	CHERRY AEROSPACE	NOx
800030	2	CHEVRON PRODUCTS CO.	NOx/SOx
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
182561	1	COLTON POWER, LP	NOx
182563	1	COLTON POWER, LP	NOx
38440	2	COOPER & BRAIN - BREA	NOx

Facility ID	Cycle	Facility Name	Program
126536	1	CPP - POMONA	NOx
63180	1	DARLING INGREDIENTS INC.	NOx
3721	2	DART CONTAINER CORP OF CALIFORNIA	NOx
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
47771	1	DELEO CLAY TILE CO INC	NOx
800037	2	DEMENNO-KERDOON DBA WORLD OIL RECYCLING	NOx
125579	1	DIRECTV	NOx
800189	1	DISNEYLAND RESORT	NOx
142536	2	DRS SENSORS & TARGETING SYSTEMS, INC	NOx
180908	1	ECO SERVICES OPERATIONS CORP.	NOx/SOx
115663	1	EL SEGUNDO ENERGY CENTER LLC	NOx
186899	1	ENERY HOLDINGS, LLC	NOx
9053	1	ENWAVE LOS ANGELES INC.	NOx
11034	2	ENWAVE LOS ANGELES INC.	NOx
800372	2	EQUILON ENTER. LLC, SHELL OIL PROD. US	NOx/SOx
124838	1	EXIDE TECHNOLOGIES	NOx/SOx
95212	1	FABRICA	NOx
11716	1	FONTANA PAPER MILLS INC	NOx
346	1	FRITO-LAY, INC.	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx
142267	2	FS PRECISION TECH LLC	NOx
192551	2	GLC FULLERTON LLC	NOx/SOx
124723	1	GREKA OIL & GAS	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
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
187348	2	HYDRO EXTRUDER, LLC	NOx

Facility ID	Cycle	Facility Name	Program
124808	2	INEOS POLYPROPYLENE LLC	NOx/SOx
129816	2	INLAND EMPIRE ENERGY CENTER, LLC	NOx
157363	2	INTERNATIONAL PAPER CO	NOx
16338	1	KAISER ALUMINUM FABRICATED PRODUCTS, LLC	NOx
187823	2	KIRKHILL INC	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
192519	1	LEGACY BY-PRODUCTS LLC	NOx
141295	2	LEKOS DYE AND FINISHING, INC	NOx
144455	2	LIFOAM INDUSTRIES, LLC	NOx
83102	2	LIGHT METALS INC	NOx
115314	2	LONG BEACH GENERATION, LLC	NOx
17623	2	LOS ANGELES ATHLETIC CLUB	NOx
58622	2	LOS ANGELES COLD STORAGE CO	NOx
800080	2	LUNDAY-THAGARD CO DBA WORLD OIL REFINING	NOx/SOx
14049	2	MARUCHAN INC	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx
182970	1	MATRIX OIL CORP	NOx
2825	1	MCP FOODS INC	NOx
176952	2	MERCEDES-BENZ WEST COAST CAMPUS	NOx
94872	2	METAL CONTAINER CORP	NOx
800207	1	METRO ST HOSP (EIS USE)	NOx
155877	1	MILLERCOORS USA 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
172005	2	NEW- INDY ONTARIO, LLC	NOx
12428	2	NEW NGC, INC.	NOx
131732	2	NEWPORT FAB, LLC	NOx
18294	1	NORTHROP GRUMMAN SYSTEMS CORP	NOx

Facility ID	Cycle	Facility Name	Program
800408	1	NORTHROP GRUMMAN SYSTEMS	NOx
800409	2	NORTHROP GRUMMAN SYSTEMS CORPORATION	NOx
130211	2	NOVIPAX, INC	NOx
89248	2	OLD COUNTRY MILLWORK INC	NOx
47781	1	OLS ENERGY-CHINO	NOx
183564	2	ONNI TIMES SQUARE LP	NOx
183415	2	ONTARIO INTERNATIONAL AIRPORT AUTHORITY	NOx
35302	2	OWENS CORNING ROOFING AND ASPHALT, LLC	NOx/SOx
7427	1	OWENS-BROCKWAY GLASS CONTAINER INC	NOx/SOx
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
800168	1	PASADENA CITY, DWP	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
800420	2	PLAINS WEST COAST TERMINALS LLC	NOx
11435	2	PQ CORPORATION	NOx/SOx
7416	1	PRAXAIR INC	NOx
42630	1	PRAXAIR INC	NOx
136	2	PRESS FORGE CO	NOx
105903	1	PRIME WHEEL	NOx
179137	1	QG PRINTING II LLC	NOx
8547	1	QUEMETCO INC	NOx/SOx
19167	2	R J. NOBLE COMPANY	NOx
20604	2	RALPHS GROCERY CO	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
189040	1	RED COLLAR PET FOODS, INC	NOx
180410	2	REICHHOLD LLC 2	NOx

Facility ID	Cycle	Facility Name	Program
800113	2	ROHR, INC.	NOx
4242	2	SAN DIEGO GAS & ELECTRIC	NOx
15504	2	SCHLOSSER FORGE COMPANY	NOx
14926	1	SEMPRA ENERGY (THE GAS CO)	NOx
152707	1	SENTINEL ENERGY CENTER LLC	NOx
184288	2	SENTINEL PEAK RESOURCES CALIFORNIA, LLC	NOx
184301	1	SENTINEL PEAK RESOURCES CALIFORNIA, LLC	NOx
188635	1	SFII FLYTE, LLC	NOx
800129	1	SFPP, L.P.	NOx
37603	1	SGL TECHNIC LLC	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
191415	2	SIERRA ALUMINUM, DIV OF SAMUEL, SON & CO	NOx
191420	2	SIERRA ALUMINUM, DIV OF SAMUEL, SON & CO	NOx
101977	1	SIGNAL HILL PETROLEUM INC	NOx
187885	2	SMITHFIELD PACKAGED MEATS CORP	NOx
119596	2	SNAK KING CORPORATION	NOx
185352	2	SNOW SUMMIT, LLC.	NOx
4477	1	SO CAL EDISON CO	NOx
5973	1	SOCAL GAS CO	NOx
8582	1	SO CAL GAS CO/PLAYA DEL REY STORAGE FAC	NOx
800127	1	SO CAL GAS CO	NOx
800128	1	SO CAL GAS CO	NOx
169754	1	SO CAL HOLDING, LLC	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
3968	1	TABC, INC	NOx
18931	2	TAMCO	NOx/SOx
174591	1	TESORO REF & MKTG CO LLC,CALCINER	NOx/SOx
174655	2	TESORO REFINING & MARKETING CO, LLC	NOx/SOx

Facility ID	Cycle	Facility Name	Program
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
16660	2	THE BOEING COMPANY	NOx
115241	1	THE BOEING COMPANY	NOx
800067	1	THE BOEING COMPANY	NOx
14736	2	THE BOEING CO-SEAL BEACH COMPLEX	NOx
11119	1	THE GAS CO./ SEMPRA ENERGY	NOx
153199	1	THE KROGER CO/RALPHS GROCERY CO	NOx
191386	2	THE NEWARK GROUP, INC. DBA GREIF, INC	NOx
97081	1	THE TERMO COMPANY	NOx
129497	1	THUMS LONG BEACH CO	NOx
800330	1	THUMS LONG BEACH	NOx
68118	2	TIDELANDS OIL PRODUCTION COMPANY ETAL	NOx
800325	2	TIDELANDS OIL PRODUCTION CO	NOx
171960	2	TIN, INC. DBA INTERNATIONAL PAPER	NOx
137508	2	TONOGA INC, TACONIC DBA	NOx
181667	1	TORRANCE REFINING COMPANY LLC	NOx/SOx
182049	2	TORRANCE VALLEY PIPELINE CO LLC	NOx
182050	1	TORRANCE VALLEY PIPELINE CO LLC	NOx
182051	1	TORRANCE VALLEY PIPELINE CO LLC	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
183108	2	URBAN COMMONS LLC EVOLUTION HOSPITALITY	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
14502	2	VERNON PUBLIC UTILITIES	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
127299	2	WILDFLOWER ENERGY LP/INDIGO GEN., LLC	NOx

APPENDIX B
FACILITY INCLUSIONS

As discussed in Chapter 1, no facilities were added to the RECLAIM universe in Compliance Year 2019. As of January 5, 2018, inclusion of new facilities is not allowed pursuant to amendments to Rule 2001.

APPENDIX C
RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

South Coast AQMD 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 2019. The reasons for shutdowns and exclusions cited below are based on the information provided by the facilities and other information available to South Coast AQMD staff.

Facility ID	42676
Facility Name	CES PLACERITA INC
City and County	Newhall, Santa Clarita, Los Angeles County
SIC	1112
Pollutant(s)	NOx
1994 Allocation	151,510 lbs.
Reason for Shutdown	The facility cited financial reasons for shutdown. Their turbine was outdated and inefficient. The cost to bring it into compliance, and to become competitive in the energy market, was too high.

Facility ID	52517
Facility Name	REXAM BEVERAGE CAN COMPANY
City and County	Chatsworth, Los Angeles County
SIC	3411
Pollutant(s)	NOx
1994 Allocation	52,003 lbs.
Reason for Shutdown	The facility stated that their operations relocated to Arizona.

Facility ID	56940
Facility Name	CITY OF ANAHEIM/COMB TURBINE GEN STATION
City and County	Anaheim, Orange County
SIC	4911
Pollutant(s)	NOx
1994 Allocation	2,098 lbs.
Reason for Shutdown	The facility stated that their operation permanently ceased because repair of the inoperable turbine was impractical and cost prohibitive.

Facility ID	168088
Facility Name	POLYNT COMPOSITES USA INC
City and County	Lynwood, Los Angeles County
SIC	2821
Pollutant(s)	NOx
1994 Allocation	6,300 lbs.
Reason for Shutdown	The facility shutdown following a corporate merger in late 2017. All operations were transferred/consolidated to an existing RECLAIM facility within South Coast AQMD.

Facility ID	173290
Facility Name	MEDICLEAN
City and County	Commerce, Los Angeles County
SIC	7219
Pollutant(s)	NOx
1994 Allocation	15,420 lbs.
Reason for Shutdown	The facility sold to a new owner and the equipment was removed.

Facility ID	176708
Facility Name	ALTAGAS POMONA ENERGY INC.
City and County	Pomona, Los Angeles County
SIC	4911
Pollutant(s)	NOx
1994 Allocation	590,920 lbs.
Reason for Shutdown	The facility cited a lack of demand from their peaker unit in a changing energy market as their reason for shutdown. The facility had not run in over 2 years and was approved for retirement and dismantled..

Facility ID	185101
Facility Name	LSC COMMUNICATIONS, LA MFG DIV
City and County	Torrance, Los Angeles County
SIC	2752
Pollutant(s)	NOx
1994 Allocation	23,018 lbs.
Reason for Shutdown	The facility sold to a new owner. The equipment was removed, the building demolished, and the property was redeveloped.

APPENDIX D
FACILITIES THAT EXCEEDED THEIR ANNUAL ALLOCATION FOR COMPLIANCE YEAR 2019

The following is a list of facilities that did not have enough RTCs to cover their NOx and/or SOx emissions in Compliance Year 2019 based on the results of audits conducted by South Coast AQMD staff.

Facility ID	Facility Name	Compliance Year	Pollutant
136	Press Forge Co.	2019	NOx
3721	Dart Container Corp of California	2019	NOx
7411	Davis Wire Corp.	2019	NOx
20203	Reconserve of California-Los Angeles Inc.	2019	NOx
59618	Pacific Continental Textiles, Inc.	2019	NOx
126536	CPP Pomona	2019	NOx
156741	Harbor Cogeneration Co, LLC	2019	NOx
183415	Ontario International Airport Authority	2019	NOx
183832	AST Textile Group, Inc.	2019	NOx
184958	Broncs Inc. DBA West Coast Textiles	2019	NOx
186899	Enery Holdings LLC	2019	NOx
800170	LA City, DWP Harbor Generating Station	2019	NOx
800181	California Portland Cement Co.	2019	SOx

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.

Facilities with reported job gains or losses attributed to RECLAIM:

Facility ID:	95212
Facility Name:	FABRICA
City and County:	Santa Ana, Orange County
SIC:	2273
Pollutant(s):	NOx
Cycle:	1
Job Gain:	1
Job Loss:	0
Comments:	The facility explained that they hired one process engineer to help with RECLAIM reporting.

ATTACHMENT 2

Annual RECLAIM Audit Report for 2019 Compliance Year

South Coast Air Quality Management District

Board Meeting

March 5, 2021

RECLAIM

REgional Clean Air Incentives Market (RECLAIM) program:

- A cap and trade program adopted in October 1993
- Objective is to meet emission reduction requirements and enhance emission monitoring while providing additional flexibility to lower compliance costs
- Includes largest NOx and SOx sources
- Specifies facility declining annual emissions caps
- Allows options to reduce emissions or buy RECLAIM Trading Credits (RTCs)

Compliance Year (CompYr) 2019 is the 26th year of the program (started in 1994)

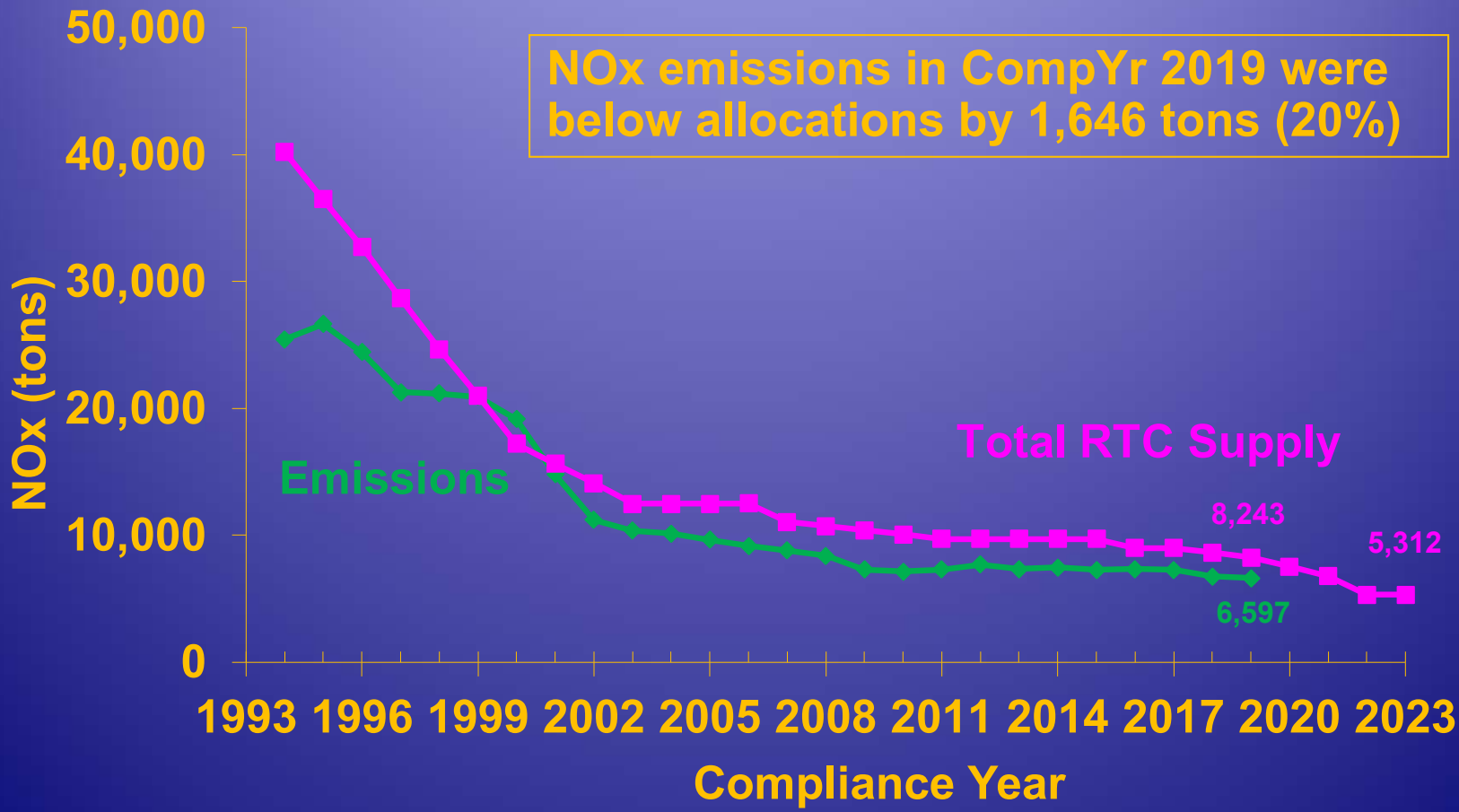
RECLAIM Annual Audit

- RECLAIM (Rule 2015) requires an annual audit of the program
- Annual RECLAIM Audit Report for Compliance Year 2019
  - Cycle 1: Jan 1, 2019 – Dec 31, 2019
  - Cycle 2: Jul 1, 2019 – Jun 30, 2020
- RECLAIM had 246 facilities at the end of CompYr 2019 (253 at end of CompYr 2018)

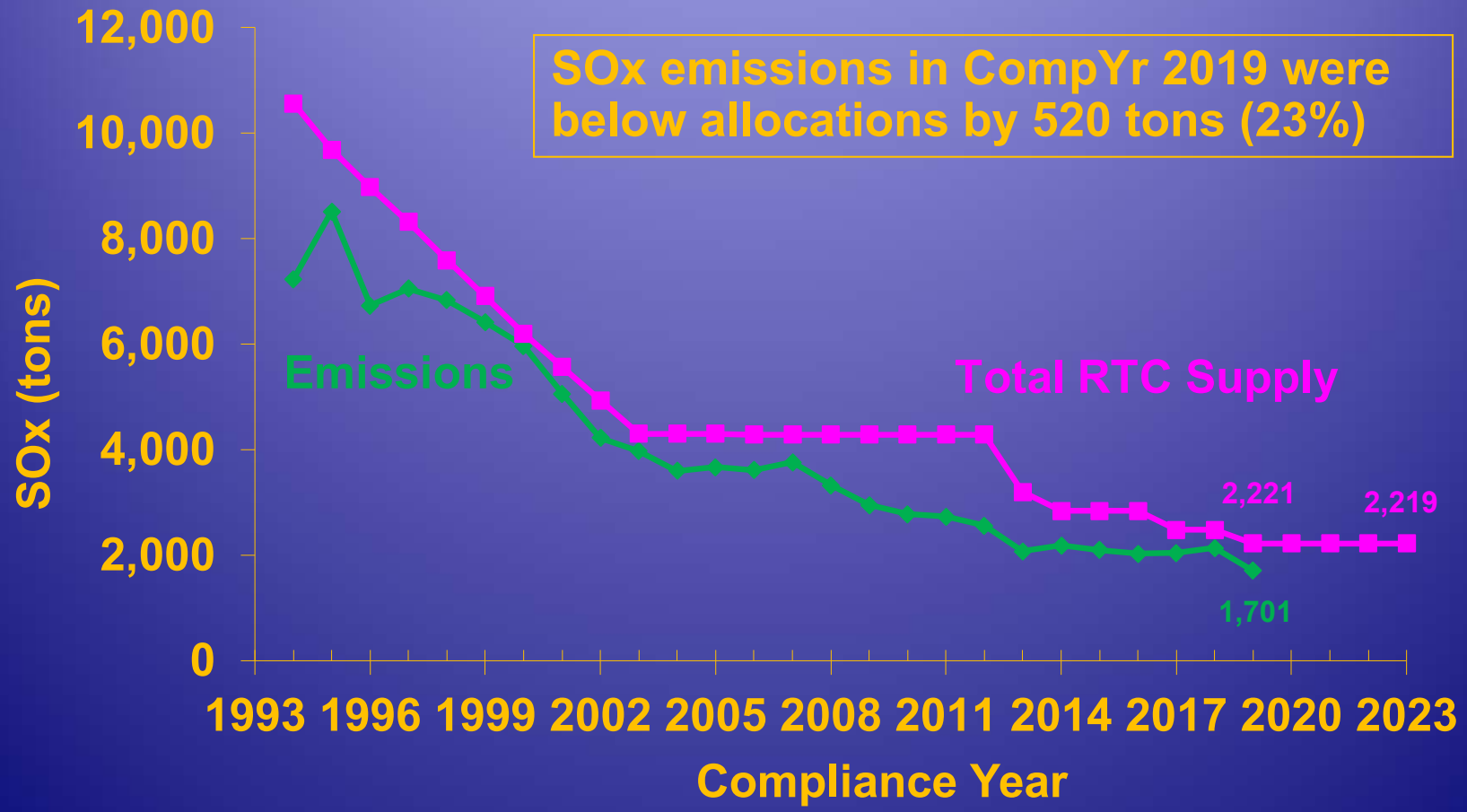
2019 Annual RECLAIM Audit Findings Compliance

- RECLAIM met overall NOx and SOx emissions goals:
  - NOx emissions **20%** below allocations
  - SOx emissions **23%** below allocations
- Allocation Shave
  - NOx Shave of 22.5% adopted January 2005 and implemented in 2007 - 2011
  - SOx Shave of 48.4% adopted November 2010 and implemented in 2013 – 2019
  - Additional NOx Shave of 45.2% adopted in December 2015 and implemented in 2016 – 2022
  - Reduction of 4 tons/day (15.1%) NOx and 5.7 tons/day (48.4%) SOx allocations in Compliance Year 2019

RECLAIM
NOx Emissions vs. Allocations Trends



RECLAIM
SOx Emissions vs. Allocations Trends

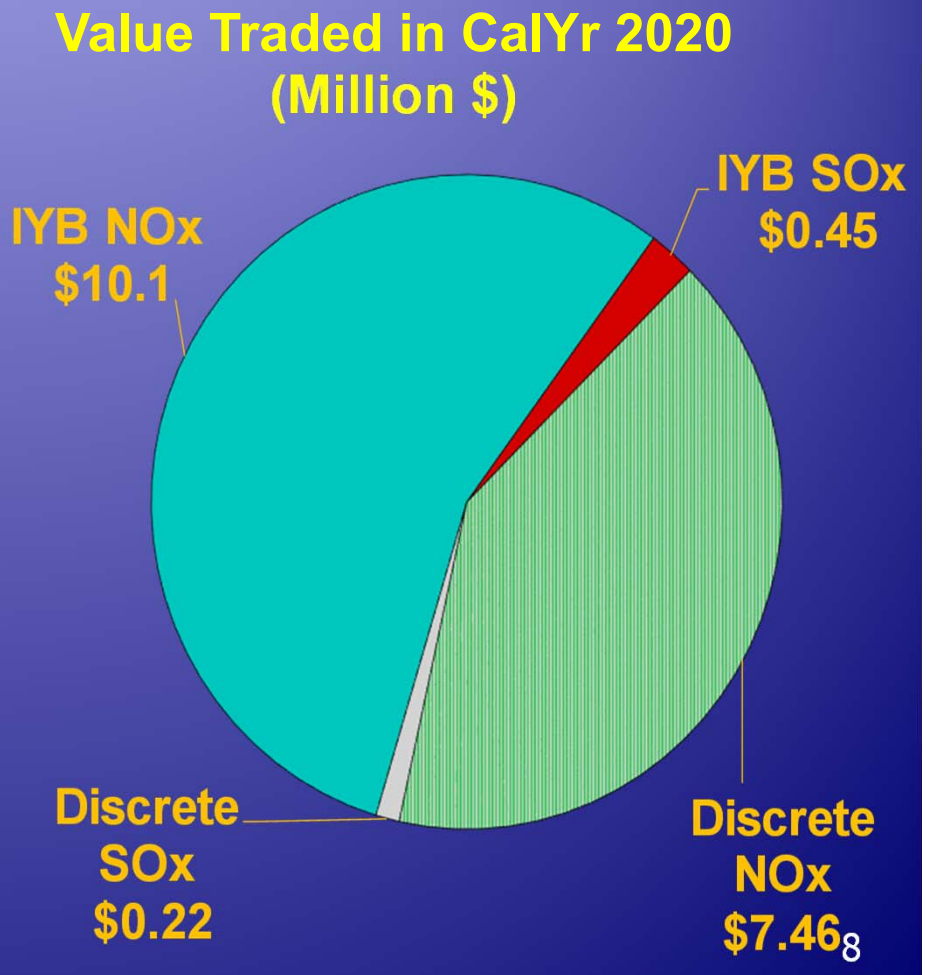


2019 Annual RECLAIM Audit Findings Compliance

- RECLAIM had a high rate of facility compliance:
  - NOx Facilities – **95%**
  - SOx Facilities – **97%**
- Facilities exceeding their allocations
  - NOx – 12 facilities exceeded by 339.9 tons (2.60% of total allocations)
  - SOx – one facility exceeded by 1.22 tons (0.01% of total allocations)

2019 Annual RECLAIM Audit Findings
Credit Trading and Prices

- $1.54 billion of RTCs traded since program inception
- RTCs are traded as either Discrete Year or Infinite-Year Block (IYB)
- $18.19 million of RTCs traded in Calendar Year (CalYr) 2020 ($ 34.24 million in CalYr 2019)



2019 Annual RECLAIM Audit Findings
Average Discrete Year NOx RTC Prices

- Average prices in CalYr 2020 below program review thresholds:
  - $15,000/ton [Rule 2015]
  - $47,585/ton* [Health and Safety Code]

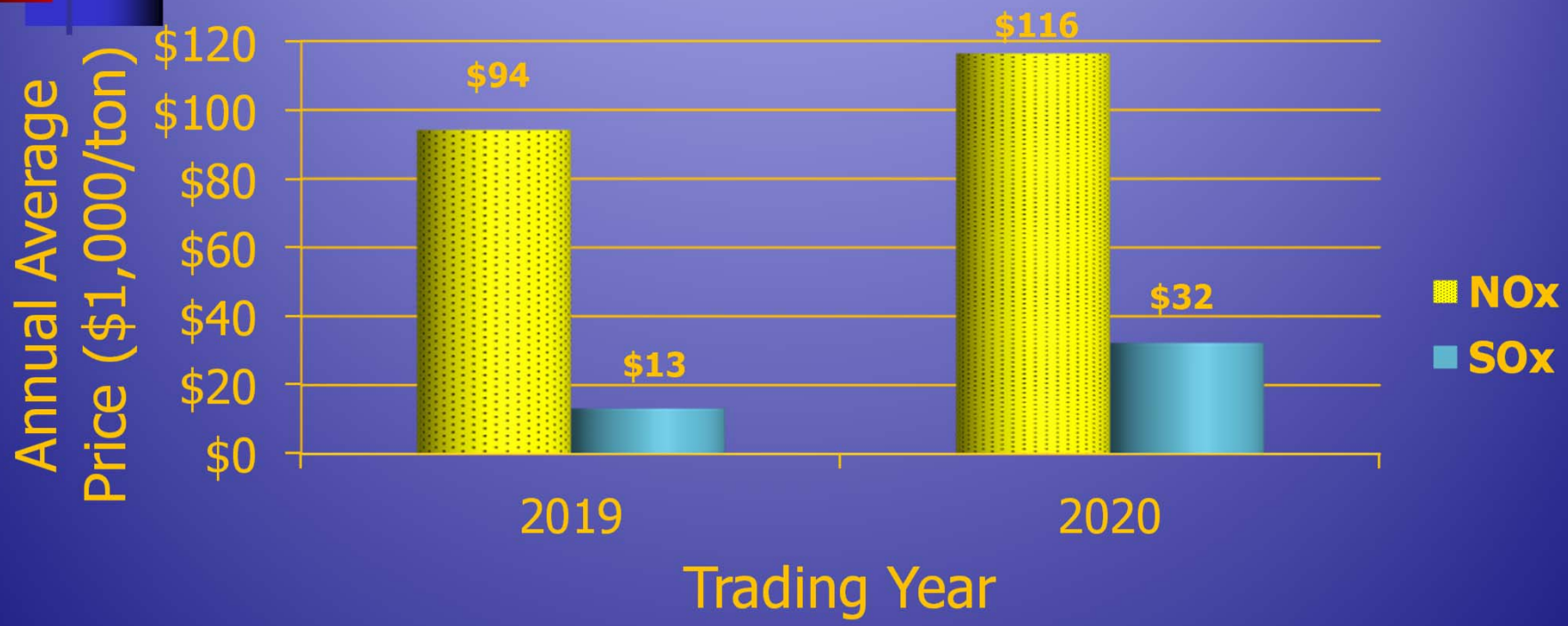
* - Adjusted by October 2020 CPI

2019 Annual RECLAIM Audit Findings
Average Discrete Year SOx RTC Prices

- Average prices in CalYr 2020 below program review thresholds:
  - $15,000/ton [Rule 2015]
  - $34,261*/ton [Health and Safety Code]

* - Adjusted by October 2020 CPI

2019 Annual RECLAIM Audit Findings
Average IYB RTC Prices



- 2020 IYB RTC average prices remain below program review thresholds [Health and Safety Code]
  - NOx = $713,777/ton*
  - SOx = $513,919/ton*

* - Adjusted by October 2020 CPI

2019 Annual RECLAIM Audit Findings
Investor Participation during CalYr 2020

- Investors are RTC holders who are not RECLAIM facility operators
- Investor participation remains active in CalYr 2020 trades.

RTC Type	Value		Volume	
	NOx	SOx	NOx	SOx
Discrete	72%	62%	66%	71%
IYB	61%	100%	63%	100%

- Investors' holdings at the end of CalYr 2020
  - 1.3% of IYB NOx RTCs (remained the same as 1.3% in CalYr 2019)
  - 4.2% of IYB SOx RTCs (down from 4.7 % in CalYr 2019)

2019 Annual RECLAIM Audit Findings
RECLAIM Transition

- On January 5, 2018, the Board directed staff to initiate the transition of the RECLAIM program to a command-and-control regulatory structure:
  - Monthly working group meetings
  - Rule-specific working groups
  - As of January 2021, the Board amended and/or adopted 11 "Landing Rules" to implement BARCT

2019 Annual RECLAIM Audit Findings

- RECLAIM facilities overall employment loss of 4.0% (net loss of 4,167 jobs)
- Met federal NSR offset ratios
- No significant shift in seasonal emissions
- No evidence of increased health risk due to RECLAIM

2019 Annual RECLAIM Audit Findings Summary/Recommendations

Summary:

- Programmatic compliance achieved (NOx and SOx emissions were 20% and 23% below allocations, respectively)
- Individual facility compliance rate remained high (95% & 97% for NOx and SOx, respectively, based on 100% of RECLAIM facilities audited in Compliance Year 2019)
- RTC prices stayed below program review thresholds
- RECLAIM met all other requirements

Recommendation:

- Approve the Annual RECLAIM Audit Report for 2019 Compliance Year

LIST OF ACRONYMS (cont'd)

PbA—lead acid
PCM—powertrain control module
PEMFC—proton exchange membrane fuel cell
PEMS—portable emissions measurement system
PEV—plug-in electric vehicle
PHET—plug-in hybrid electric truck
PHEV—plug-in hybrid vehicle
PM—particulate matter
PM2.5—particulate matter ≤ 2.5 microns
PM10—particulate matter ≤ 10 microns
POS—point of sale
ppm—parts per million
ppb—parts per billion
PSI—Power Solutions International
PTR-MS—proton transfer reaction-mass spectrometry
RD&D—research, development and demonstration
RDD&D (or RD3)—research, development, demonstration and deployment
RFP—Request for Proposal
RFS—renewable fuel standards
RI—reactive intermediates
RMC-SET— ramped modal cycle supplemental emissions test
RNG—renewable natural gas
RTP/SCS—Regional Transportation Plan/Sustainable Communities Strategy
SAE—Society of Automotive Engineers
SB—Senate Bill
SCAB—South Coast Air Basin or "Basin"
SCAQMD—South Coast Air Quality Management District
SCFM—standard cubic feet per minute
SCE – single cylinder engine
SCE—Southern California Edison
SCR—selective catalytic reduction
SHR—steam hydrogasification reaction
SI—spark ignited
SI-EGR—spark-ignited, stoichiometric, cooled exhaust gas recirculation
SIP—State Implementation Plan
SJVAPCD—San Joaquin Valley Air Pollution Control District
SMR – steam methane reforming
SOAs—secondary organic aerosols
SoCalGas—Southern California Gas Company (A Sempra Energy Utility)
SOFC – solid oxide fuel cells
SULEV—super ultra-low emission vehicle
SUV—sports utility vehicle
TAO—Technology Advancement Office
TAP— (Ports') Technology Advancement Program
TC—total carbon
TEMS—transportable emissions measurement system
THC—total hydrocarbons
TO—task order
tpd—tons per day
TRB—Transportation Research Board
TRL—technology readiness level
TSI—Three Squares, Inc.
TTSI—Total Transportation Services, Inc.
TWC—three-way catalyst
UCI – University of California, Irvine
UCR—University of California, Riverside
UCR/CE-CERT—UCR/College of Engineering/Center for Environmental Research & Technology
UCLA—University of California, Los Angeles
UDDS—urban dynamometer driving schedule
µg/m^3—microgram per cubic meter
ULEV—ultra low emission vehicle
UPS—United Postal Service
U.S.—United States
U.S.EPA—United States Environmental Protection Agency
V2B—vehicle-to-building
V2G—vehicle-to-grid
V2G/B—vehicle-to-building functionality
VMT—vehicle miles traveled
VOC—volatile organic compounds
VPP—virtual power plant
WGS – water gas shift
WVU—West Virginia University
ZEB – zero-emission bus
ZECT—Zero Emission Cargo Transport
ZEV—zero emissions vehicle